

Building Corbett's Navy: The Principles of Maritime Strategy and the Functions of the Navy in Naval Policy

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Title: Building Corbett's Navy: The Principles of Maritime Strategy and the Functions of the Navy in Naval Policy

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Thesis: In order to properly balance the fleet and fulfill its roles in the 21st century, the Navy must apply the principles of maritime strategy laid forth by Sir Julian Corbett and re-organize its policy around the enduring functions of the Navy.

Discussion: The purpose of this paper is to apply Corbett's principles of maritime strategy to establish policy based upon an approach founded on the functions of the Navy. This paper proposes that the Navy must redefine and re-aggregate its strategic concepts of power projection, sea control and forward presence around Corbett's principles of maritime strategy in planning its future fleet. The Navy's current approach is rooted within strategic traditions rather than the principles and constants of naval warfare, strategy and policy. To achieve success in the future the Navy must found its naval policy on its functions in consonance with the principles of maritime strategy. This paper compares current naval policy to previous policy against Corbett's principles and the functions of the Navy. It will demonstrate that an efficient and adaptable naval policy must be based on principles and functions rather than the Navy's strategic concepts. Since the early 1990s the balance of naval power has been re-directed to land warfare in recognition of an expeditionary security environment, a significant change from the monolithic anti-Soviet naval policy. Change is required due to the absence of the Soviet fleet threat. History and Corbett's principles demand that functions drive naval policy rather than strategic concepts founded upon an obsolete threat. Functions are less susceptible to the radical shifts of politically charged strategic tidal changes of administrations. A functional approach enables prioritization of capabilities and results in choices that minimize risk and allow the Navy to articulate its true requirements to serve the nation's interest.

Conclusions: The principles of maritime strategy demonstrate that the Navy must re-organize its naval policy around the

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functions of the Navy in order to successfully incorporate a capabilities based approach to force planning. This paper provides a functional approach model based on the functions of the Navy and Corbett's principles of maritime strategy.

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"Naval officers, as professionals, must understand the Navy's missions, continually question their rationale, and provide the intellectual basis for keeping them relevant and responsive to the nation's needs." ...Vice Admiral Stansfield Turner (USN)¹

Thesis and Purpose

In order to balance the fleet effectively in the 21st century the Navy must adopt a naval policy based on the functions of the Navy. The purpose of this paper is to recommend such an approach based on enduring and emerging functions of the Navy. This paper proposes that the Navy must redefine its strategic concepts of power projection, sea control and forward presence, honed to a sharp edge against the Soviet threat, and return to Sir Julian Corbett's principles of maritime strategy in planning its future fleet. The Navy's current approach is rooted within strategic traditions rather than the principles and constants of naval warfare.

Strategic Change and The Leverage of Sea Power

Since the fall of the Soviet Union the US has struggled with the diversity of conflict that has threatened its national security interests. Threats to security in the forms of destructive and advanced weapons proliferation, failed states, trans-national terrorism, smuggling and regional competitors have reduced the conventional security afforded by the United States' unique geographical relationship with the sea. Accordingly, increased reliance will be placed on forward expeditionary forces.²

The world's ocean going navies are declining in numbers.³ As a result the Navy's relative combat capability continues to increase.⁴ But rather than a "crisis of irrelevance" as it faced following World War II, the Navy faces what Captain John Byron termed a "crisis of relevance." The crisis of relevance arises from more frequent and less traditional naval missions, in the littorals, in the face of fewer resources with which to accomplish them.⁵ In order to resolve the crisis, the Navy must articulate how strategic change in the new expeditionary era translates into priorities in naval warfare.

Sea power provides enormous strategic leverage in a world where global economic integration accelerates.⁶ World economic and demographic trends reveal allies and adversaries alike depend overwhelmingly on strategic sea-lanes.⁷ For a great maritime power such as the US, sea power remains an intrinsic instrument of geopolitics through the control of maritime communications.⁸

The Navy is also required to combat trans-national threats. In defending the homeland forward in the war on terror, the Navy allows the US to reach terrorists with the flexibility, endurance and mobility afforded by the seas. The Navy is a sovereign means by which to project the nation's power.⁹

The rapid proliferation of advanced weapons technology threatens to erode the Navy's supremacy in key littoral regions of the world. Regional adversaries may in the future attempt to prevent the Navy from accessing these littorals through new and innovative means afforded by the rapid proliferation of ballistic and cruise missiles, advanced air defense systems, military and commercial space

capabilities, over-the-horizon radars, and low observable unmanned aerial vehicles, coupled with anti-ship cruise missiles, advanced diesel submarines, and advanced mines. In response the 2001 Quadrennial Defense Review (QDR) called for new approaches to projecting power to meet these threats.¹⁰

Experts continue to debate the proliferation of area denial threats.¹¹ But the attacks of September 11th demonstrated that it may not be possible to know from where, or in what form, threats to vital interests will originate. Strategic change is expected, and with such change comes inevitable debates on all sides concerned regarding the Navy's roles, missions and force structure.¹²

Problems in the Capabilities Approach to Force Planning

The current environment does not permit force planning from a particular threat model as the Navy did in the Cold War. In response, the Secretary of Defense in 2003 directed the services to adopt a "capabilities" approach to force planning. Rather than focusing on particular threats, the approach focuses on regional military capabilities and specifically directs planners to assess how they may threaten the US.¹³

Paradoxically there are dangers in this approach. A capabilities approach is inefficient at best if it merely seeks primacy everywhere through material advantage.¹⁴ At its worst it will miss key strategic requirements in balancing resources. As a result, despite the lack of specific threat based planning, a capabilities approach must have a strategy to guide it.¹⁵

Geoffrey Till recognized the difficulty of this approach to naval planning in the early 1990s. Due to a navy's diverse functions Till likened the capabilities approach to "shopping in a "supermarket" with the caveat that no navy ever realizes a level of resources commensurate with all of its requirements.¹⁶ Budgetary predictions are never certain, but there is a reasonable chance that the Navy soon will face Till's dilemma in the future, if it does not already, as shown in Appendix A.¹⁷

More than budgets, success in managing changes in military technology results from doctrinal and organizational adaptation,¹⁸ qualities the Navy has demonstrated in the past. For example, under the severe fiscal and treaty constraints of the interwar years, the Navy adapted its organization and doctrine to naval aviation, submarines and amphibious assault.¹⁹ Present and future challenges in the expeditionary era will require the same flexibility.

Challenges of Naval Policy

Jon Sumida, writing of the Royal Navy's adaptation to strategic change at the turn of the last century, noted that efficient naval policy is ideally a process whereby naval strategy and doctrine determine the types of forces, after which armaments and tactics are determined.²⁰ Political and other constraints, of course, prevent ideal efficiency, not just limited fiscal resources. Gerald S. Graham, also writing of the Royal Navy, summarized these as politics, finance and commerce.²¹ Sumida and others have confirmed these restraints, along with the very nature of naval technology itself.²²

The ship design, acquisition and production process is lengthy and produces ships with life-spans of decades. As strategic requirements inevitably evolve faster than the design, acquisition and production cycle can realize the Navy never achieves its ideal fleet. New naval strategies in response to new security threats thus depend in the short term on the current composition of the fleet.²³ This necessitates adapting current platforms to prevailing threats and concepts of warfare.²⁴

The Navy is a technology-based, capital-intensive institution that does not transform quickly, even in the face of necessity driven by rapid changes in geopolitics and strategy. David Rosenberg noted that naval strategy, as understood by naval officers, does not necessarily consist of "erudite strategic theories" as much as it consists of "day by day policy and program choices" which are backed by the experience of operations and tactics.²⁵ This reality also blunts efforts to bring efficiency to naval policy.

The Navy's ability to adapt the current fleet to strategic change stems from design-bred technological trends and naval policy choices to produce individual platforms that are capable across a range of missions.²⁶ Many techniques have been used to balance the fleet's capabilities, including a "Hi-Lo Mix" as in the 1970s, the maximum use of existing assets through life extensions and balanced procurement. In recent history, the Navy has placed reliance on versatile multi-mission ships that were balanced across air, surface and sub-surface capabilities.²⁷ This multi-mission capability came at a price however. The cost of each individual ship increased significantly as shown in

Appendix B. As costs rose, the value of quality outweighed the value in quantity.²⁸ The Navy had better ships but fewer of them.

Service leadership continues to welcome this trend.²⁹ In the Cold War, with a relatively stable threat around which to plan, the Navy bought high capability ships on the premise that a few well-coordinated highly capable ships could out-perform a larger number of less expensive ones.³⁰ Appendix C illustrates the decrease in fleet numbers in this period. For example, while surface combatant numbers decreased from 108 to 80 from 1990 through 2001, the 80 remaining ships in 2001 carried 784 more missiles. Despite fewer numbers, combat power actually increased.³¹ Advances in technology, particularly communications, sensors, and precision weapons, provide greater opportunities for a smaller force to deliver the lethality of a larger force by massing effects rather than forces.³²

The division of naval warfare into different communities also effects policy with unpredictable results. George W. Baer has noted that, despite its detachment from political and strategic realities, War Plan Orange provided cohesion in the 1930s by dividing resources among communities, or "unions," keeping alive emerging technologies and doctrines.³³ In the stable threat environment of the Cold War, the Navy maintained a remarkably consistent and categorized fleet constitution, as shown in Appendix D. But ship production must sustain the industrial base, and a natural outcome is that vested interests influence the process in ways not necessarily derived from strategic requirements.³⁴ When resources are scarce, community and

vested interests often react first with survival instincts rather than adaptation.³⁵ And adaptation is in the Navy's best interest.

The fleet's projected size and composition fluctuates frequently due to all of these influences.³⁶ But the overall trend in the post-war era has been one of quality over quantity. The Navy's *Strategic Planning Guidance 2000* noted however, that, at some point, numbers matter.³⁷

Finding the right number is not possible though, without first recognizing that the current balance of platforms and multi-mission capabilities was derived during the monolithic threat environment of the Cold War, an altogether different strategic era than that which confronts the Navy at the dawn of the 21st century. Referencing only this narrow past will not yield the right number or balance.

Likewise, a capabilities approach to naval policy based solely on anticipation of the future will not result in the proper balance or numbers of the fleet because of the risks inherent in predicting future events.³⁸ As Colin S. Gray states, there is no correct way to conduct force planning, only better and worse ways, because it is not possible to distinguish the "fanciful from the real future."³⁹ The way to plan the force has been given, and now the Navy must make the capabilities approach into effective naval policy.

Effectively managing a capabilities approach to force planning and articulating requirements requires answering two fundamental questions. First, for what purpose(s) does the US need a navy? Second, what does the Navy do in fulfilling the nation's interest in using the sea? To provide answers, this paper consolidates the works

of several authors to demonstrate that the purposes and methods of naval warfare are enduring and represented in the enduring functions of the Navy.

Roles and Strategic Concepts

The terminology used to define the Navy's enduring character can be confusing. Its *missions* are tasks that may change, assigned by the National Command Authorities, nominally through the combatant commanders.⁴⁰ Samuel Huntington, in his 1954 seminal article in *Proceedings*, defined a "strategic concept" as an idea that defines a Service's unique purpose to the nation, from which resources are determined and subsequently organized and allocated.⁴¹ The Navy's *roles* are the broad and enduring purposes for which the Service was established in law.

Naval Doctrinal Publication 1, *Naval Warfare*, summarizes the Navy's roles:

- Maintaining Maritime Superiority
- Contributing to Regional Stability
- Conducting Operations On and From the Sea
- Seizing or Defending Advanced Naval Bases
- Conducting Such Land Operations Essential to the Prosecution of Naval Campaigns⁴²

Missions change, but ostensibly derive from roles. The Navy, however, does not use its roles in planning policy. Rather it uses strategic concepts, which it often considers "enduring missions." The Navy's strategic concepts have changed very little since the 1970s:

- Power Projection
- Sea Control
- Forward Presence
- Strategic Sealift
- Strategic Deterrence⁴³

The Navy's strategic concepts are broad generalizations that do not translate effectively to naval policy. Merely reducing mission requirements to simple manifestations of these concepts favors doctrinal and organizational rigidity by ignoring the principles of maritime strategy and history's lessons regarding the enduring nature of naval warfare.

Strategy and the Methods of Naval Warfare

According to Corbett maritime strategy defines "what part the fleet must play in relation to the action of land forces" and its paramount concern is to "determine the mutual relations of the army and navy in a plan of war."⁴⁴ The Navy today is committed to Joint Force and coalition operations on or in the land, sea, air, space and information mediums through which the Joint Force executes the National Military Strategy and conducts war.⁴⁵ In effect it operates within the framework of a maritime strategy, in which non-naval forces may be used for objectives traditionally related to the sea.⁴⁶ Current naval policy reflects this by attempting to provide "direct, decisive and sustained influence in joint campaigns."⁴⁷

Purely naval strategy, on the other hand, determines the movement of the fleet to achieve its part in maritime strategy.⁴⁸ Naval strategy and doctrine are the ways, or methods by which naval forces accomplish strategic or operational objectives; naval forces are the means by which they are accomplished. Risk is the extent to which the ends diverge from the means.⁴⁹ Risk occurs when means are too spare or insufficient to attain the ends, or when the cost of the means

outweighs the ends. This paper uses the term naval strategy as it is concerned with naval force planning.

For Corbett, there was no single way in which a navy accomplished all of its purposes.⁵⁰ While the first purpose of naval warfare was to "either directly or indirectly to temporarily secure command of the sea, or to prevent an enemy from securing it," command of the sea was not the only purpose of naval warfare. Defining command of the sea as localized control of maritime communications, for military or commercial means, Corbett valued local command of the sea for the naval contributions it brings to the immediate ends of maritime strategy in time and place.⁵¹ Naval warfare therefore is comprised not only of methods to achieve local command of the sea, but also methods in which to exercise that command for strategic ends.

Corbett distinguished the methods by which local command of the sea was obtained and used in strategy through his study of history and analysis of contemporary events. Corbett noted that navies may not always endeavor to "command the sea", but rather may, in denying its use, "dispute" the command. His methods of securing and disputing command, and exercising command are summarized below:

Methods of securing command.

1. By obtaining a decision.
2. By blockade.

Methods of disputing command:

1. Principle of the "fleet in being".
2. Minor counter-attacks.

Methods of exercising command:

1. Defense against invasion.
2. Attack and defense of commerce.
3. Attack, defense and support of military expeditions.⁵²

Frank Uhlig Jr. reached very similar conclusions through his study of how navies fight. Uhlig showed that once the passage of friendly shipping is assured, other methods of naval warfare are elevated to a purpose in strategy.⁵³ History demonstrates that the methods of naval warfare, in their entirety, while not strategically decisive, are strategically indispensable in influencing events ashore.⁵⁴

Naval Warfare - The Enduring Methods

It is easy to dismiss Corbett's writing as outdated, belonging to an era of fleet battles and cruiser warfare. NDP-1, though, written following the fall of the Soviet Fleet, follows Corbett by recognizing that local command of the sea, which it defines as "maritime superiority," is related to the methods of naval warfare in exercising command, which it defined in the following list:

1. To protect lines of communication.
2. To deny the enemy commercial and military use of the seas.
3. To establish an area of operations for projecting power ashore.
4. To support amphibious operations.
5. To protect the naval logistic support to forward deployed battle forces.⁵⁵

Roger W. Barnett found that through the course of history naval strategies manifest themselves in methods similar to those outlined by Corbett:

- Fleet battle
- Blockade
- Commerce Raiding
- Fleet in Being

- Coastal Defense
- Maritime Power Projection⁵⁶

Uhlig also identified five methods of naval warfare that recurred often enough in history that he termed them constants of naval warfare. Significantly, Uhlig showed that these methods remained constant through periods of enormous technological change in ships and armaments. In US history alone, these recurring methods of naval warfare existed in the late 18th century era of ships of the line, frigates and sloops of war, the battleship era of the late 19th and early 20th centuries and remained throughout the post-World War II era of carrier battle groups and submarines:

- The Strategic Movement of Troops (Armies and Air Forces alike)
- The Acquisition of Advanced Bases as Close as Possible to the Scene of Action (by either Military Force or Civil Means)
- The Landing of Armies on Hostile Shores (and Their Support by Fires and Logistics)
- The Blockade
- The Struggle for Local Mastery of the Sea⁵⁷

In *Navies in History*, Clark G. Reynolds demonstrated that great maritime powers require their navies to perform what he termed key functions as the basis of national strategy, that bear resemblance to the enduring methods of naval warfare:

- Control the seas through a strong battle fleet
- Defend against invasion
- Protect merchant shipping and interdict or destroy enemy shipping
- Blockade enemy coasts
- Engage in combined land operations
- Conduct amphibious operations
- Engage in strategic bombardment⁵⁸

The Functions of the US Navy

Rear Admiral John Chase (USN), writing in *Proceedings* in 1969, described the historical development of the US Navy in terms of functions, which were similar to the methods of naval warfare noted by the previous authors.⁵⁹ Chase's functions of the Navy have defined the Navy's purpose to the nation during particular periods of history, as such they describe the roles the Navy serves in support of national strategy. And the fleet's constitution has more or less reflected these functions within their respective periods. Representing both roles and methods, the functions of the Navy serve as organizing principles of naval policy.

Table 1: Chase's Functions of the US Navy

<u>Period</u>	<u>Functions of the Navy</u>
Revolutionary War to War of 1812.	Coastal Defense, Commerce Raiding.
War of 1812 through Civil War to 1889	Enforcement of US Interests Abroad, Commanding the Seas, Direct Support of Land Operations
1889 through World War II	Commanding the Seas. Instrument of Foreign Policy. Enforcement of US Interests Abroad. Commerce Raiding. Direct Support of Land Operations
World War II - 1970	Projecting Force Inland from the Sea, Strategic Deterrence, Instrument of Foreign Policy.

Chase showed that the functions of the Navy may change in priority with national policy or strategic requirements. For example, from the end of the Cold War to the present, the Navy has served US foreign policy by protecting US interests, deterring adversaries, responding to crises and assuring allies. This service to foreign policy has its origins in the 19th century's squadron patrols. It was also demonstrated in the role of the small Asiatic Fleet. The Navy

has continued to protect shipping, mostly in the Mid-East in recent times, and even engaged in commerce raiding as late as World War II. And the Navy has engaged in direct support of land operations in two World Wars and numerous limited conflicts, notably Korea, Vietnam, Afghanistan and both Iraq wars.

With the methods of naval warfare intrinsic within the functions of the Navy, the means have logically developed from them. The enduring functions of the Navy have reflected national priorities and have led to shipbuilding programs to support these functions. The Jeffersonian Navy had coastal defense boats. Following the War of 1812 and through most of the 19th century the Navy was primarily one of frigates, tasked to support trade, shipping and the expansion of US foreign policy.⁶⁰ During the Civil War the Navy consisted of inshore gunboats and coastal monitors. In Mahan's era, to accomplish its functions, the Navy was more complex in its constitution, containing battleships, cruisers, destroyers, submarines and many other new means of naval warfare, such as the carrier following World War I. The fleet's constitution grew more complex as the enduring functions of the Navy developed and each became more relevant with the rise of the US as a great maritime power, and the decline of earlier fleet competitors such as Britain, Germany, Japan and finally the Soviet Union.

Chase's list also showed that new functions of the Navy emerge in response to strategic requirements, technology or a combination of both. Such was the case with carrier air and submarines in the interwar years. Strategic deterrence emerged in the Cold War. Today

it appears the Navy is engaging in a new form of coastal defense in the form of ballistic missile defense and increasing efforts to create a coherent strategic maritime relationship with the Coast Guard for the interdiction of trans-national threats. Theater missile defense is an example of new technology leading to new mission capabilities that may either transcend or redefine existing functions, such as support for force ashore or service to foreign policy, or it may even merit consideration as a new function of the Navy. Sea basing is another new mission capability that supports the enduring function of directly supporting land operations.

Chase's observations provide the foundation for anchoring naval policy in the enduring methods of naval warfare. Appendix E summarizes the conclusions of the various authors considered where we can see a general pattern, or conclusion, emerges. The enduring methods of naval warfare represent the Navy's roles, comprise naval strategy and define the fleet's constitution. This observation simplifies the confusion over terms such as roles, missions, functions and strategic concepts. Missions derive from the functions of the Navy, representative of the Navy's roles and the enduring methods of naval warfare.

A more efficient, and coherent, naval policy can be achieved through organization around the functions of the Navy. This paper provides one framework for this organization by consolidating the works of the aforementioned authors in a manner representative of the nation's interest in using the sea. The relation of functions to

naval means was at the center of Corbett's principles of maritime strategy.

Corbett's Theory of the Means

Corbett recognized that fleets tend to differentiate into platforms that were "material definitions" of their functions within the fleet. That is, a fleet was inherently divided into groupings of platforms that had distinct purposes in carrying out the methods of naval warfare, the summary of which is listed in Appendix E. A fleet's constitution was by no means constant; it was influenced by prevailing strategic and tactical ideas, material available and prevailing theories of warfare.

In Corbett's time, the battle fleet existed to command the sea, cruisers locally controlled sea-lanes and exercised command, and destroyers and coastal craft performed lesser functions. But the fundamental relationship remained. A fleet's constitution should correctly reflect the strategic prioritization of the methods of naval warfare. For Britain, control and exercise of sea-lanes of communication placed paramount importance on cruisers.

Corbett also addressed multi-mission capability by noting that, over time, technological advances "blurred" the functional distinctions in a fleet. As an example, armored cruisers drifted into the battle line in his time. The blurring of unique contributions was contrary to the proper balancing of the fleet because the value of a platform in the fleet is first and foremost measured by its unique contributions to what Corbett termed the "complex duties" of a fleet. The most complex duties were the duties associated with local command

of the sea and exercise of command. A fleet had to be correctly balanced across the required methods of naval warfare.

When this effect occurred out of a desire to incorporate ships into the function of the battle fleet, Corbett termed the effect "rating." This was a trend he found in Royal Navy history when true cruisers disappeared in favor of classes of "rated" cruisers during the Anglo-Dutch Wars. That is, larger cruisers built with more guns blurred the distinction between functional cruisers and the battle line. A cruiser's "rating" was determined by the number of guns mounted for fleet battle duty. USS Constitution was an early American example, carrying 44 guns rather than the 36 normal in 18th century frigates.

If rating occurred to the extent that logical distinctions in platforms were no longer evident the fleet's overall constitution eventually bore no relation to the enduring functions of a fleet. The outcome was one of cruisers that were not particularly well suited to perform any particular function. Rating thus transformed these ships according to their value in the battle line rather than outside the battle line, a notable example being the battle cruiser developed prior to World War I. Britain's development of the battle cruiser disregarded the enduring functions of cruisers in favor of battle line duties.⁶¹

Corbett considered it essential that a fleet's constitution represent the complexity of its functions. Continuous upward rating was to be avoided. Likewise, the battle fleet should be made as powerful as possible and the resources allocated to it should not be

used to adapt the battle fleet to other methods of naval warfare (battleships would not serve convoy escort duties). Corbett noted periods in Royal Navy history in which the fleet was properly constituted. Under Lord Anson, commerce raiding required a light or lightly armored vessel constructed without reference to the battle line. Britain also required vessels capable of coastwise and inshore work, primarily for island defense. Lord Anson's Royal Navy was composed of what Corbett termed a distinct battle fleet, cruiser fleet and flotilla.⁶²

It is wrong to draw the conclusion that Corbett's principles reject the value of multi-mission capability. Rather, the important lesson from his principles is that a fleet must be balanced across various means best tailored for local command of the sea and exercise of command, the total of which are the methods of naval warfare. Likewise, rating does not rule out or minimize duties in the battle fleet. But it must not become prevalent to the point where the fleet's platforms lose their unique value in contributing to local command of the sea and exercise of command. Corbett's ideal navy therefore consists of a variety of ship classes, each first and foremost built to execute its distinct part in the functions of a navy.

The Navy's modern history represents these very dynamics. In the relatively stable and threat-based strategic era of battle fleets, with its emphasis on rated cruisers, battleships and dreadnoughts, the Navy found the need for functional distinctions in mission capabilities that manifest themselves in classes of ships.

Battleships, lighter cruisers, destroyers, submarines, gunboats and various small craft and auxiliaries represented various elements of the fleet's complex duties. Cruiser class designations varied significantly, ranging from heavy and light protected cruisers for battle line duties along with commerce protection or interdiction. The Asiatic Station demanded cruisers, destroyers, submarines at Manila and Yangtze coastal gunboats. Coastal defense and later escort duties required small patrol craft, sub chasers, and destroyers respectively.

Appendix F graphically demonstrates the functional variety in the fleet from 1910 to 1938. Cruisers and submarines are included as examples that a given platform may have various classes, specialized in relation to the functions of a fleet.

The present forms of multi-mission combatants were developed during the Cold War, and here we see a potentially risky trend toward "rating." Major combatants became increasingly identified with the carrier task force, whose primary function became power projection, with some initially oriented toward anti-submarine warfare. The later carrier battle group combined increasingly sophisticated platforms to combat threats in 3 dimensions of naval warfare: surface, air and sub-surface, planned against the increasing Soviet blue water threat.

Services in support of carrier battle groups brought similar design parameters to surface combatants, leading Vice Admiral Turner to echo Corbett's concern in the 1970s over "blurs." Turner commented that the balance of naval resources had become increasingly difficult owing to the overlap in capabilities.⁶³ By 1975 the multi-mission

development of the escort functions in the carrier battle group construct had blurred class and functional distinctions to the point that the Navy re-classified most of its frigates as cruisers and the rest of them destroyers. Additionally, destroyer escorts were re-classified as frigates based on their functional distinctions in the fleet's overall constitution.⁶⁴ Appendix G graphically demonstrates this Cold War trend for major combatants.

The Cold War multi-mission trend left the Navy with four functionally distinguishable combatant platforms, the carrier, the amphibious assault ship, the attack submarine and the ballistic missile submarine. Surface combatants largely became "blurred" in escort capabilities over time, and surface combatants and submarines alike ended up "rated" in cruise missile strike capability. Appendix H illustrates the lack of distinction in combatants defined by escort duties.

Consolidating the Functions of the Navy

a. Organizational Construct

Appendix E provides a summary of the functions of navies from the authors considered in this paper. This paper proposes consolidation of these functions for the Navy that, while no means final, can serve as a model from which the Navy can establish the balance of the fleet. The goal of consolidation is to find those functions that are both enduring and emerging, and that represent the Navy's purpose to the nation, as well as the methods of naval warfare, in order to provide sound articulation of the Navy's needs.

The functions of the Navy first and foremost represent the enduring interest of the nation in its use of the sea. As Corbett argued, the ultimate value of the sea is that it isolates, or limits sources of conflict from the homeland. The further threats can be separated by geography through the use of the seas, the more secure the homeland and the more military action takes on limited rather than unlimited form.⁶⁵ Likewise, in response adversaries may either deny the nation's use of the sea, or even attempt to use the sea to attack or invade the homeland.

Captain Wayne Hughes Jr. acknowledged that the modern Navy is employed for sea control, power projection and forward presence, but showed that it is nonetheless better to represent the Navy's employment in four basic ways which provide a framework within which the functions of the Navy can be logically consolidated and arranged. Hughes's framework best defines the roles of the Navy. This framework organizes the functions of the Navy around Corbett's definition of commanding the sea:

1. The movement of and delivery of goods and services safely on the sea.
2. The prevention of enemy movements and delivery of goods and services on the sea.
3. The movement of and delivery of goods and services from the sea.
4. The prevention of enemy movements and delivery of goods and services from the sea.

"Goods and services," in this sense, are both commercial and military. Military services and goods include the means of land warfare; for example, army and/or Marine combat units, aircraft, missiles, sensors, ammunition, fuel, and other logistics go by sea.⁶⁶

Appendix I illustrates that commanding the sea is a war-fighting function that for a great maritime power may range from fleet battle to local contest in limited fashion, depending on the strategic objectives to be accomplished and the means and intentions of an adversary in denying the sea or using it for offensive advantage. The Navy needs to understand local command of the sea, or what it terms sea control, as Corbett understood it. Sea control occurs in a specific time and place, and delivers the contributions of the functions of the Navy in strategy.

The Navy ensures the safe movement of goods and services on the seas, a long-standing current example of which is the Navy's post-1980 activity in the Arabian Gulf. This role may require unique mission capabilities; the Navy serves as the world's Navy in stabilizing the flow of goods and commerce.⁶⁷ The nature of this role continues to evolve as chokepoints, hubs and straits become increasingly interdependent and centralized and as trans-national and piracy threats increase.⁶⁸ The assault on and defense of shipping may require abandoning the open oceans and moving into coastal waters and narrow seas in order to confront naval and non-naval threats, necessitating new platforms or mission capabilities.⁶⁹

Appendix J summarizes the various authors' interpretations regarding this essential commerce related role. The function serving this role was best described by Chase and is given below:

Role: To ensure the safe movement and delivery of goods and services on the sea.

Function:

1. To protect US and allied shipping.

The nation also seeks to prevent an adversary's safe passage on the sea. From the history of commerce raiding, this role will likely require unique mission capabilities also, such as submarine launched torpedoes. As another example, during the blockade of Cuba in the Cuban Missile Crisis of 1962, the Navy found its Leahy class frigates could not fire shots across the bows of Soviet merchants, necessitating design of the 76 mm gun.⁷⁰ Though Corbett and Chase considered the blockade as a method of commanding the sea, this paper views the blockade as a capability for interdicting or destroying enemy shipping. The same is true for commerce raiding. From Appendix J the function to fulfill this role is summarized as follows:

Role: To deny an adversary the safe movement and delivery of goods on the sea.

Function:

1. To interdict or destroy enemy shipping.

The nation seeks to limit the effects and threats of war on its homeland through extending its defense forward through the sea. Doing so requires maintaining military forces in advanced locations to deliver force ashore or support forces ashore. Appendix K summarizes various authors' conclusions regarding naval functions that fulfill this role. To find representation in naval policy it is necessary to categorize this role with sufficient granularity that translates to mission capabilities. Terms such as direct support or engagement in land or combined operations are very broad. Uhlig provides the best summary, and his conclusions are modified in terminology only and proposed as enduring functions:

Role: To ensure the safe delivery of goods and services from the sea.

Functions:

1. To move battle forces to theater.
2. To land battle forces ashore.
3. To seize advanced bases.
4. To support battle forces by logistics.
5. To support battle forces by fires.

The Navy also prevents an adversary from delivering goods and services ashore. This may be necessary to support US battle forces abroad or may be necessary to defend the homeland. Newer missions regarding this role are theater missile defense, interdiction of weapons of mass destruction and trans-national terrorists into the US, and national missile defense. During the Cold War the nation to a large degree depended on strategic deterrence to defend the homeland, which may be insufficient in the future against foes who do not fear death or destruction and who do not possess a homeland. Missions may require the capability to strike quickly with no warning or to insert and extract forces quickly.

This discussion shows that many functions of the Navy, and their associated missions and capabilities, may overlap. For example the interdiction of shipping may serve homeland defense, or it may serve the objectives of war abroad. The purpose of the functional approach to naval policy is to provide sound organization and articulation of naval requirements, so it is necessary to identify unique functions that allow definition of Navy missions and capabilities. The functions for this role are summarized from the various authors in Appendix L. The unique functions associated with this role are summarized below; the relevant terminology of defending the homeland replaces the older functional term of coastal defense.

Role: To deny an adversary the safe delivery of goods and services from the sea.

Functions:

1. To defend the homeland.
2. To provide strategic deterrence.

b. The Unique Function of Serving Foreign Policy

Chase's singular function of service in support of foreign policy requires particular discussion. Graham noted, writing of the Royal Navy of the 19th century, that naval strategy is "inseparable from foreign policy, requiring consideration of a navy's use in peace as well as war."⁷¹ Chase's function of serving of foreign policy derives from the Navy's availability to policy-makers through use of the sea.⁷² On this subject, modern authors have reached conclusions similar to Corbett's that the value of the sea lies in isolating and limiting conflict; ocean-going navies are considered indispensable as an instrument of limited force to pursue objectives short of war.⁷³

In the US, national leaders consider the Navy indispensable in managing dynamic and complex crises that rapidly transition from peace to war.⁷⁴ Sir James Cable, writing in *Proceedings* in the 1980s, noted that strategic requirements would demand the Navy's service in limiting conflicts and responding to crises in increasing fashion.⁷⁵ The present day bears true Cable's observation, evidenced by recent Joint Force emphasis on crisis and conflict resolution.⁷⁶

Generally, as many authors have written, the US, in the post-World War II era, has used naval force short of war to compel, deter and coerce adversaries and assure allies.⁷⁷ These concepts will continue to evolve, as evidenced by the new concept of dissuasion, a "softer" form of classic conventional deterrence.⁷⁸ In addition to

these political uses, the US has a history, as Chase noted, of using naval force or potential naval force to protect US citizens or to promote US interests.⁷⁹ NDP-1 provides an apt listing of the Navy's missions in diplomacy and foreign policy in its description of "Naval Operations Other Than War."⁸⁰ The missions short of war assigned to the Navy, whether involving the use of force, diplomacy, foreign policy objectives or a combination of all, are broad and varied. But historically they exert considerable influence on the Navy's peacetime employment patterns and the use of its forces.⁸¹

Cable noted in earlier works that translating the use of naval forces for objectives short of war to capabilities is not an easy task. It is very difficult to construct a strategy from what are essentially unique and discrete applications of naval force.⁸² Vice Admiral Turner presented this difficulty from a different view, namely one of distinction, by noting that the Navy's war-fighting capabilities overlap in their contributions to deterrence and coercion.⁸³

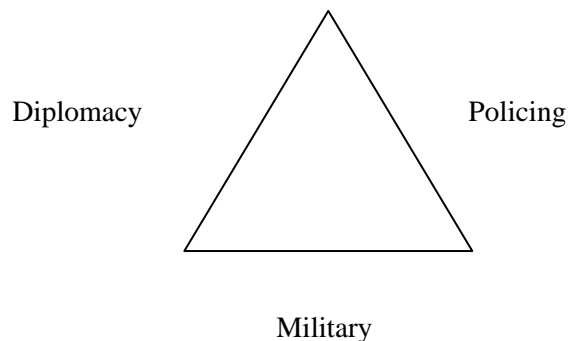
A considerable number of studies have attempted to determine relationships between methods and means in these uses of naval force. Generally "no one size fits all."⁸⁴ Success in conventional deterrence is first and foremost political and dependent more on the perceived willingness of a government in addition to more quantifiable relative capabilities.⁸⁵ Naval forces are useful both for their availability and their ability to respond in uniform fashion.⁸⁶

Additionally, trans-national threats may not be deterred by naval forces.⁸⁷ Organizations such as Al Qaeda and its associates may

require pre-emptive destruction. The roots of all regional crises are political and social in origin, and may only be served with reaction.⁸⁸ For all of these reasons, this paper views Ken Booth's method of organizing naval missions short of war into functions as the proper approach to integrating these missions into naval policy.

Booth summarized the use of naval forces in foreign policy into three basic categories; military, diplomatic and policing. Booth used his "use of the sea" triangle to represent these and to show that the use of naval forces short of war falls into three basic categories, all of which are founded on the military capabilities of a navy.⁸⁹

Figure 1: Booth's Triangle for The Use of the Navy in Support of Foreign Policy



Booth's triangle can be used to categorize the uses of the Navy short of war. Freedom of navigation operations, the interception of vessels with illegal immigrants on the high seas, and maritime interception operations are, for example, forms of policing. Missions conducted in concert with other nations or under international resolutions or alliances, examples of which may be peace-keeping, sanctions enforcement, disaster relief or humanitarian assistance support diplomacy. This includes multi-lateral and bi-lateral

security operations, exercises and arrangements. Deterrence and coercion may be diplomatic or policing missions depending on policy objectives.

Booth's methodology provides the perspective needed to distinguish these missions from the functions of the Navy. The functions of the Navy are representative of the enduring methods of naval warfare, and the capabilities used to exercise these functions are used in missions short of war. Their use may support military, diplomatic, or policing objectives, which may be nearly infinite in variety and highly political in character. As mentioned earlier, these missions short of war, regardless of the category of the objective involved have a significant impact on naval policy, most notably through requirements for deployment. It is therefore important to articulate this unique and enduring function of the Navy apart from others in organizing policy. This paper views Chase's description, modified slightly in terminology, as most suitable:

1. To promote, protect and enforce US interests abroad.

The ten enduring functions of the Navy proposed by this paper are summarized from Hughes' framework in Appendix M and are listed below:

1. To protect US and Allied shipping.
2. To interdict or destroy adversary shipping.
3. To move battle forces to theater.
4. To land battle forces ashore.
5. To seize advanced bases.
6. To support battle forces by logistics.
7. To support battle forces by fires.
8. To defend the homeland.
9. To provide strategic deterrence.
10. To promote, protect and defend US interests abroad.

There are two other functions listed in Appendix E that have not been addressed, power projection and the fleet in being. Discussion of these functions is reserved for later.

Corbett's Theory of the Method and The Relation of Method to Means

Graham wrote that the strategic problem of fleets from 1588, when the Royal Navy defeated the Spanish Armada, to the modern era has been the problem of assembling the necessary number of ships in order to concentrate the necessary force.⁹⁰ The Navy today faces the dilemma of concentration and dispersion. It has on one hand departed from its post-Cold War pattern of carrier deployments by further dispersing the fleet into different force constructs.⁹¹ On the other hand, it is required to concentrate its carrier fleet for Joint campaign contingencies in the war on terror.⁹²

The Royal Navy faced a similar strategic problem at the turn of the last century in response to the German High Seas Fleet, and it is instructive to consider the policy debates that resulted in Britain. The Royal Navy had to balance battle fleet concentration in the North Sea with its enduring worldwide function of enforcing and protecting colonial and territorial interests.⁹³ Britain's response was a wholesale debate over the Royal Navy's strategy and its constitution.⁹⁴

Britain's debate considered building fewer capital ships with greater reliance on diplomacy, such as the Anglo-Japanese Alliance and the Anglo-French entente, and a reduction of commitments.⁹⁵ Considerations involved re-balancing the fleet through superior numbers of fast armored cruisers,⁹⁶ and re-orienting the fleet around new naval technologies such as submarines.⁹⁷ Jackie Fisher recognized

that strategy for the period required less a conventional battle fleet than one composed of new types of ships capable of new tactics.⁹⁸ Fisher's proposals began to re-balance the fleet with new means that served its natural division; flotillas in the form of submarines, torpedo boats and destroyers for coastal defense and battle cruisers, which were "ratings" of the Invincible "battle cruiser" into the battle line.

While concentration is doctrinally associated with mass and force, Corbett repudiated these definitions, derived from land warfare, in favor of terms that suited naval warfare. The proper degree of concentration for a fleet is that which permits a fleet to locally command the sea while awaiting the opportunity for a decision in battle.⁹⁹ This is a powerful concept with implications on naval policy. Corbett used the example of cruiser warfare from his era in history to illustrate the use of this theory of the method to the theory of the means. Concentration of cruisers in the battle line, while necessary for scouting and other duties, detracted from their ability to command the sea through their unique, enduring functions.¹⁰⁰ The object of naval strategy is therefore to find the proper balance between concentration for battle and dispersion to locally command the sea to achieve strategic ends.

If a fleet is concentrated and it can no longer command the seas, by which it meant not only local physical command but also exercise of command, a fundamental shift in strategic requirements has occurred and must be addressed. Debates in naval policy must concern re-

addressing the balance. This is exactly what Britain did in the example noted earlier.

Reynolds noted that great maritime powers expect their navies to perform several functions in constructing national strategy. In these terms, the problem of fleet concentration is not merely the problem of physically concentrating ships for engagement. It is rather Corbett's problem in general terms: the problem of how to disperse the fleet to locally command the sea to fulfill the nation's interest in using it. And from Corbett, sound naval strategy, or the proper degree of concentration, is first predicated on the proper constitution, or balance, of the fleet. This balance has two aspects: the right "kind" of platforms and the right "number" of platforms.

Respected naval analysts today reach conclusions that echo Corbett's principles. Dr. Norman Friedman has noted that networking capabilities further the existing "tendency" for naval operations to be dispersed.¹⁰¹ Vice Admiral Art Cebrowski, as President of the Naval War College, rejected constraining the Navy to a relatively few large multi-mission platforms, instead advocating distribution of capabilities among a variety of platforms rather than endowing individual platforms with all capabilities.¹⁰² Ronald O'Rourke concluded that the implications of dispersion in new and existing networking capabilities now require consideration of the unique value of each individual platform in the context of the overall fleet's architecture, a principle consonant with Corbett's theory of the means.¹⁰³

Problems with Strategic Concepts

Two of the Navy's strategic concepts are functional, strategic deterrence and strategic sealift. The other three, power projection, sea control and forward presence, encompass missions and capabilities that transcend functional boundaries. These three strategic concepts are of particular interest because they do not provide functional distinction in naval policy, and their historical origins bring limits to doctrinal and organizational adaptation.

Through its strategic concepts, notably sea control and power projection, the Navy's policy debates divide along what appear to be contradictory concepts of naval warfare. Sea control represents localized command of the sea, and power projection represents the navy influencing events ashore through means such as aircraft or missiles. This dichotomy makes it difficult to organize ways and means through a single policy. Thus writers on the Navy are stuck with rigidly categorized thinking. Rather than constructing strategy, or finding the control of maritime communications that allows naval warfare to pursue maritime strategy, writers call for a "power projection" Navy.¹⁰⁴ Others demand the return to the first purpose of sea control.¹⁰⁵

a. Sea Control

The Navy traces its modern lineage of commanding the sea to Mahan, who established it as the first of the Navy's strategic concepts, from Huntington's definition, by subordinating the other functions of the Navy to it. This line of thinking presents the first pitfall of the Navy's strategic thinking. In Mahan's era, the idea of

serving national purposes through a priority of functions based on national policy was deemed arbitrary. The strategic concept of commanding the sea, instead, was independent of national policy and the notion allowed the Navy to focus exclusively on the force structure and operations required to achieve it,¹⁰⁶ primarily the battle line. The battleships in turn existed for one purpose: decisive battle.¹⁰⁷

Other functions of the Navy, particularly commerce raiding, were ineffective.¹⁰⁸ The same held true for service in support of foreign policy. Under this concept, the only worthy objective of the fleet was the unlimited destruction of an opposing fleet.¹⁰⁹ The doctrine of decisive battle obscured the strategic value of battles less than decisive and relegated other forms of naval warfare to secondary or non-importance.¹¹⁰ The strategic concept of commanding the seas relegated other functions of the Navy to comparative unimportance. In 1914 the Navy had 10 battleships, but fewer than 13 armored cruisers, 8 light cruisers and only 26 destroyers.

In Mahan's era, the strategic concept of building the Navy for commanding the sea required a navy second-to-none naval policy of supremacy which national policy never supported until 1916. Command of the sea was built upon superior battle fleet numbers, but Germany out-built the US. Additionally the navy second-to-none was interrupted by the functional needs of World War I that demanded large numbers of destroyers and escorts. Jutland, the exemplar of Mahan's strategic concept, proved indecisive. In the Pacific, the Navy never achieved forward basing to allow more than a token force in Asiatic

waters. Foreign policy diverged from the naval means to support it.¹¹¹ Navy policy was not supported by Congress and was never realized.¹¹²

Strategic concepts can affect war planning. In the development of War Plan Orange so-called "thrusters" assumed from Mahan's strategic concept the end of decisive battle, relying on unrealistic assumptions of future resources, such as the "Great Western Base," in order to achieve desired results - a Pacific Jutland. "Thrusters" sought quick decisive battle and ignored the new realities of naval warfare: torpedoes, submarines, mines and naval aviation that could attrite the battle fleet in its rush to battle.

Vice Admiral Turner pioneered the concept of sea control in the early 1970s to replace the concept of commanding the sea. By his definition, sea control acknowledges the limitations placed on absolute command of the sea by technology, such as submarines and naval aviation.¹¹³ But this definition does not fully articulate what Corbett defined as the value of local command of the sea, namely what it allows the navy to accomplish toward strategic ends. Sea control as a strategic concept in naval policy implies that the Navy's ability to control the sea is either independent of strategy, or an end in itself, similar to Mahan, without recognizing that the functions of the Navy are strategically indispensable, not just decisive results at sea.

Modern sea control's complexity transcends the notion that it is a purely naval concept. As an example, sea control threats today are a combination of sea denial measures through many medium; land, space, and sea. The littoral is rapidly becoming a mix of obstacles that

must be defeated by a variety of means, not all naval.¹¹⁴ And sea control is increasingly defined in the Joint sense by the concept of forcible entry for battle forces. Sea control is not independent from what it serves, whether the protecting for naval forces or enabling power projection, or other methods and ends.

b. Power Projection

The strategic concept of power projection arose from doctrines of carrier air and amphibious assault and the use of battleships and heavy combatants in shore bombardment.¹¹⁵ These technologies and capabilities were in turn the result of organizational adaptation and doctrinal changes in the interwar years and their proof by fire in World War II. Through their versatility and ability to support national policy, power projection became a significant function of the Navy.

Indeed, the versatility of power projection, in particular through the carrier, re-defined the functions of the post-1945 Navy. Strategic deterrence first emerged from carrier strike in the early 1950s.¹¹⁶ Direct support for land forces was redefined in the forms of tactical air support and interdiction and close-air support in the limited Korean conflict, along with amphibious assault and shore bombardment.¹¹⁷ The carrier's capabilities were demonstrated anew in Vietnam, Desert Storm, Operation Enduring Freedom and Operation Iraqi Freedom. Carriers served the protection and enforcement of US interests abroad through conventional deterrence and crisis response¹¹⁸ and later under the military strategy of Flexible Response.¹¹⁹

Until 2001, power projection was associated almost exclusively with forward deployed carrier task forces (later carrier battle groups (CVBG)), and to a lesser extent amphibious ready groups (ARG), though battleships remained in fleet inventory until the early 1990s. Cruise missiles added another mission capability to surface and sub-surface combatants. By the 1970s, in functional terms, the strategic concept of power projection encompassed the service of foreign policy, the protection of US interests abroad, the seizing of advanced bases and the support of battle forces by fire. Additionally the carrier battle group construct also possessed the capabilities to locally command the sea in all 3 media of naval warfare; air, surface and sub-surface.

Like sea control, the capabilities that deliver power projection cannot be separated from their relationships to functions. Power projection does not exist independent of its functional purpose. The diversity of platforms needed to carry out missions requiring power projection, carriers for air strike, surface and sub-surface combatants for cruise missile strike and amphibious assault and delivery ships for ground assault contradict the concept that power projection is independent of functional priority and specific missions. The capabilities comprising power projection are war-fighting capabilities that are inherently organized in functional terms.

c. Forward Presence

Like sea control and power projection, the complexity of serving foreign policy is translated to a single strategic concept; forward presence, meaning forward deployment. Forward deployment has a long

history. It dates to the 19th century and various European and Asiatic stations and continues to the present. In the post-World War II era forward deployment began with carrier task forces stationed in the Philippines, Japan and Europe for the purpose of containing and destroying initially inferior Soviet naval forces if needed in their home waters.¹²⁰ Forward deployment became the strategic concept of forward presence in the 1970s, demonstrating that in the Navy's eyes the carrier battle groups once again played a key role in policy.¹²¹

Like power projection, forward presence was intrinsically associated with the carrier. After Vietnam the Navy re-affirmed carrier force structure, in spite of shifts from administration to administration that brought different concepts of the Navy's overall purpose in national defense and differences in foreign policy.¹²² In the 1970s the Navy formally based carrier force requirements, and by extension fleet numbers, on forward presence and the need to counter the Soviet buildup.¹²³

In reality, forward presence is not independent of functions and objectives. Vice Admiral Turner termed the "tactics" of presence as first preventive and second reactive deployments.¹²⁴ Admiral Reason described forward presence as a combination of forward basing, deployment, cruising and sprinting, each with their various advantages and disadvantages.¹²⁵ The forward deployed posture of the fleet ideally derives from strategy. It is an implication of existing force structure rather than a determining factor on force structure.¹²⁶ Though not defensive in the classic sense considered by Corbett, for

the Navy forward presence is best described by Barnett; a form of "fleet in being."¹²⁷

d. Strategic Concepts and Strategic Change

Organizing naval policy around vague strategic concepts obscures the relationship between ways and means enunciated with clarity by Corbett. Using strategic concepts, the Navy works the process between methods and means in reverse, necessary in the short term as noted earlier but detrimental in the long term. The balance of the fleet itself becomes constant, or strategically independent, and strategy is constructed around exactly constant means. This reduces Huntington's idea to "buzz words", which substitute for strategic thinking. The Navy can justify static doctrines and a static organization even when strategic requirements change, reinforcing community divisions and vested interests.

This trend is not easily recognized due to the enduring nature of platforms and policy, but naturally leads to divergence in ends and means, or risk, either in the form of an inability to perform functions required by maritime strategy or relative disadvantages when compared to adversary capabilities. The limits of strategic concepts as organizing principles for building the fleet are evident in the two notable instances of strategic change that occurred in the post-World War II era; the rise of the Soviet oceanic capability in the 1960s and 1970s and the fall of the Soviet Fleet in the early 1990s.

In the first case, the prospect of Soviet oceanic fleets threatened the fleet's degree of carrier dispersion, and some such as Admiral Zumwalt began to see divergence in ends and means. The

employment of carriers in pursuit of objectives short of war, combined with the thought that the Soviets could contest the carrier led many to debate the fleet's constitution in a manner similar to that of Britain already discussed. New ship classes for the presence missions and sea control were considered.¹²⁸ The carrier was re-considered as a battle fleet.¹²⁹ These fundamental debates were rejected, however, in favor of existing forward deployed carriers for the ostensible rationale to maintain "maritime supremacy."¹³⁰ In reality this was an updated or renamed version of Mahan's "command of the sea."

If strategic concepts reinforce a fleet structure that dates from 1945 they are divorced from national purposes. The versatility of the carrier, and the ability to associate the majority of the Navy's functions with its capabilities made this choice superficially plausible. The Maritime Strategy of the mid-1980s was sound in the short term. However, this period saw a unique confluence of strategic circumstance, which is no longer the case. Nor will it likely be the case in the future. In effect, these Mahanian concepts justify the Navy to seek strategic priority and adaptability not for functions but for enhancing force constructs. From Corbett, this is rating the fleet at the expense of current missions.

The evidence of this effect was demonstrated in the 1990s. The demise of the Soviet Fleet in the early 1990s represented a fundamental change in the Navy's strategic requirements, from which the strategic concepts of sea control, power projection and forward presence had originated. But the Navy did not fully examine the implications of the changes in strategic requirements and debate the

constitution of the fleet. It was thought that the Maritime Strategy, and the association of carrier battle groups and amphibious ready groups with forward presence missions, was still applicable even in the absence of counter-naval requirements.¹³¹

The Navy chose to strive for relevance with a legacy force structure that defined strategic concepts by directly relating them to grand strategy, an attempt to replicate the success of the Cold War.¹³² "Forward...from the Sea" reaffirmed the forward deployment of carrier battle groups and amphibious ready groups as a strategy into itself.¹³³ But direct association of naval forces with grand strategy lends only general notions regarding actual force requirements.¹³⁴ With no mirror image to plan capabilities against, the objectives of grand strategy offered, at best, broad and diffuse national objectives from which to plan the fleet.¹³⁵ The relevance and forms of the functions of the Navy were subordinated to the missions of forward presence and power projection.¹³⁶

Confronted with unrecognizable political or military objectives¹³⁷ and no means by which to determine the utility of forward presence when applied to broad national purposes,¹³⁸ adverse effects on naval policy occurred. The costs imposed by such operations limited fleet modernization and re-capitalization.¹³⁹ The indispensability of Navy functions to maritime strategy was obscured in the Joint Force as other services redefined forward presence and competed for power projection roles.¹⁴⁰ Debates over forward presence were reduced to surrogates for debates over force structure rather than strategy.¹⁴¹ Forward presence was a force justifier rather than a fleet in being

consonant with regional strategies. Ends did not match means, and critics noted the increased risk that resulted.¹⁴²

A Recommended Functional Approach to Naval Policy

It is necessary for the Navy to coherently articulate its policy and the reasons for its choices in mission capabilities and platforms. In order to do so, the Navy must return to Corbett's principles of maritime strategy and use its enduring functions as the basis of its naval policy. From these principles and enduring functions, the Navy can value its platforms through their unique contributions to functions first, and then proceed with the choices inherent in the capabilities approach to planning.

First, the Navy must determine where existing platforms fit within functions. Then, the navy must determine shortfalls in capabilities with respect to functions. That is, capabilities, existing and desired, must be determined that accomplish a function. Then it must factor those capabilities against an adversary's ability to deny the effort. Capabilities are synthesized by function. Decisions are made in cases of redundancy that may prevent the procurement of new relevant capabilities.

Sea control is local, and defined by the necessary capabilities to establish it for particular functions. For example, if sea control is needed for deterrence, then the Navy must define this mission set. In similar fashion, power projection mission capabilities are first differentiated by the functions they serve. The assessment of relative capabilities includes how the Navy will fight also. Doctrine is therefore an essential element.

Doctrine is used to determine how naval capabilities will be employed against the ways in which an adversary is expected to attempt denial. Doctrine must permit adaptability and foster the flexibility that responds to adversary capabilities. The functional approach offers a template by which commanders may determine naval forces needed for mission requirements.¹⁴³ The combined judgments of relative capabilities and doctrine manage risk.

Organizational adaptation is also provided by the approach, which rejects constant means in favor of continual re-assessment of the fleet's balance. The values of platforms are defined by their relationships to the overall fleet architecture, defined by the ability to execute the functions of the Navy. Sound decisions then can be made to add unique or redundant mission capabilities to those of other platforms in the face of limited resources. This includes decisions on rating.

Appendix N provides an example of how old and new mission capabilities can be aggregated by functional sets. Due regard must always be given to whether or not new missions and technologies constitute the need for new functions. This paper finds that mission capabilities manifest in policy fit within the sets of functions defined by history as enduring. Others may draw different conclusions.

The Navy's problem in articulating future needs derives from past success, current platforms are either capable of all but a few of the newer mission capabilities, or can be adapted to them. Attention must be directed to articulating the need for those mission capabilities

not currently represented, rather than operational refinements of existing ones. In all likelihood new ship classes may be necessary to achieve the final balance. Articulation from functions provides definition for new classes, and allows trade-offs in capabilities no longer needed or tailored specifically for past strategic requirements. No arbitrary numbers on the fleet's size are accepted until the balance of the fleet with respect to functions is determined.

It is beyond the scope of this paper to recommend detailed solutions to all of the Navy's current proposals. The model may show that current platform programs are appropriate. Or it may point to the need for less costly and more functionally specialized platforms that are expeditionary rather than multi-mission oriented. Or yet, it may allow recognition that existing platforms can be operated in different postures and ways that accomplish many capabilities the Navy is attempting to purchase. What is recommended is an approach to naval policy founded on the principles of maritime strategy and the enduring functions of the Navy.

Current Naval Policy

Risk and resource constraints inevitably lead the Navy's critics to question the usefulness of its carrier fleet. Indeed, the argument against strategic concepts presented in this paper could be interpreted as implying that the carrier itself is as outdated as the concepts it represented in the Cold War. But to approach current policy from this argument is to fall victim to the doctrinal limits of

strategic concepts. Properly understood, Corbett's principles show the carrier is in fact relevant in the expeditionary environment.

Corbett's theory of the method shows that today the carrier strike group is in fact the Navy's battle fleet, though for different purposes. Indeed, the recent need to concentrate carrier strike groups in home waters, at the expense of dispersed deployment, is a degree of concentration that did not occur even in the Cold War against a formidable fleet threat.¹⁴⁴ Maritime strategy requires attack carriers.

The new change in the fleet's degree of concentration prioritizes the fleet's functions. The carrier battle group construct has been replaced with greater dispersion in the form of carrier strike groups (CSG), expeditionary strike groups (ESG), surface action groups (SAG), and in the future missile defense strike groups (MDSG) and independent cruise missile submarines (SSGN). The CSG and ESG will concentrate into a larger Expeditionary Strike Force (ESF) when requirements demand.¹⁴⁵ Examples of the new constructs are listed in Appendix O.

The fleet's dispersion represents the Navy's recognition of fundamental changes in the security environment, and is the necessary adaptation of the existing fleet to current requirements. But will this strategic change result in a new fleet balance? There is a risk that the Navy has made these decisions solely from the perspective of "rating" in power projection. That is, carrier air wing strike power is now sufficient to offset the loss of surface combatants as carrier escorts. By the Navy's admission the new employment is a belated

recognition that carrier strike groups are no longer threatened on the open ocean.¹⁴⁶

This is tacit recognition that the value of combatants can no longer be measured in terms of carrier escort roles. But the Navy must not simply allow the ARG to replace the carrier for this purpose in an attempt to continue to validate old strategic constructs. The value of combatants must be measured through local command of the sea and execution of command outside escort duties.

Current changes in naval policy offer an opportunity to return to Corbett's principles. Clearly, in departing from Cold War force constructs, the Navy has recognized that Mahan's "command of the sea" is no longer a useful concept. Current naval policy indicates that sea control and power projection are actually differing sets of mission capabilities. But policy must abandon its continuing adherence to the task force construct that obscures the ability to articulate new requirements.¹⁴⁷ The familiar problems of balancing choices in capabilities with required fleet numbers needed to meet QDR and Defense Planning Guidance goals is producing familiar difficulties in an austere resource environment.

The emphasis on Sea Strike, in reality power projection by a new name, makes it difficult for the Navy to articulate the need for the new Littoral Combatant Ship (LCS), a smaller, cheaper, modular ship designed for the littorals, and with combat capabilities that are expected to include mine warfare, anti-small boat warfare and littoral undersea warfare. Due to its lack of strike capability, the question remains from pundits why it is needed. Cruisers and destroyers

already operating in the littorals bring strike capability and point and area defense systems. Moreover, the new DD(X) and CG(X) programs will improve point missile defense with new hull forms intended to enhance littoral operations, and will also be modular.¹⁴⁸

The same is true with respect to Sea Shield. The modular LCS missions appear to be duplications of other requested capabilities and technologies such as unmanned mine or airborne countermeasures, unmanned underwater vehicles, and advanced deployable long dwell sensors to name a few. Destroyers, cruisers and attack submarines operating in the littorals already possess robust undersea warfare capabilities. It thus appears that LCS is simply an attempt to arbitrarily increase fleet numbers without a coherent argument for the overall architecture of the fleet.¹⁴⁹ Internal professional debates do not lend to the Navy's favor, focusing on older models of economic efficiency learned in the Cold War and "big ships versus small ships" rather than capabilities and justifications through functions.¹⁵⁰

The problem of articulation is particularly acute when the new destroyer and cruiser designs are considered. Current cruisers and destroyers are only distinct by a cruiser's redundancy and the fact that cruisers are better manned and equipped for area air defense. The cruiser will be differentiated in the future by upgrades in existing platforms for theater missile defense, which will continue with CG(X). CG(X) will possess naval surface fire support in the form of extended range guided munitions, and will contain improvements in long range air defense.¹⁵¹

But DD(X) will also bring redundant capabilities, containing the advanced gun system (AGS) for naval surface fire support, and both ships will continue to be expected to perform undersea warfare, surface, mine, strike warfare and maritime interception operations.¹⁵² Appendix P summarizes the most recent Congressional Budget Office study regarding the surface combatant fleet and shows the difficulty in functional distinctions. Many other examples abound, such as ideas to begin duplicating carrier air capabilities with new expeditionary carriers in the ESG.¹⁵³

The need for expeditionary and land oriented mission capabilities is not disputed. However, the translation of these needs to choices in platforms is difficult because the Navy continues to pursue platforms that for the most part are capable of all missions. The transition of the fleet to new requirements cannot be accomplished without the application of Corbett's principles, which demand functional value in each class of ship. To adequately articulate naval policy from Corbett's principles, the Navy must adopt and prioritize its enduring functions as the basis of its policy.

A functional approach to naval policy provides articulation and the ability to balance the fleet. For example the next-generation destroyer, oriented to land attack, may no longer need to possess the robust blue water capability of its predecessors. But such a trade-off is not possible to consider through strategic concepts, which demand that each platform carry the fullest sets of capabilities belonging to both sea control and power projection. Functionally,

there may be more than one class of destroyer, a larger number of land attack oriented versions and a few deep-water optimized versions.

Conversely, trade-offs in cruiser design may remove some cruiser combat capabilities in favor a new class oriented to theater missile defense or national ballistic missile defense. More than one class of cruiser may be needed. The LCS on the other hand, through its designed operations in the East Asian littorals, must be seen as a platform that performs missions related to promoting, protecting and defending US interests abroad, protects US and allied shipping, interdicts and destroys adversary shipping, and may even support battle forces ashore. In short, each of these platforms is more than just a strike platform or a sea shield.

Conclusion

A functional approach to naval policy provides a framework by which the Navy can articulate its needs and balance the fleet to strategic requirements. It adheres to Corbett's principles of maritime strategy, and offers the articulation for a relevant and balanced Navy that is adaptable to expeditionary warfare and that hedges the re-emergence of a blue water threat. The answer to choosing multi-mission capabilities lies between the historical extremes of one ship performing one particular mission in a function and every ship performing most or all missions within a function or functions. The principles of maritime strategy provide the guidance for these choices.

A functional approach provides a framework that encourages doctrinal and organizational adaptation while keeping relevant the

enduring purposes and methods of naval warfare in national strategy. It rejects simple, artificial constructs produced by strategic concepts. Instead, the functional approach requires professional naval officers to understand the historical leverage and current relevance of sea power as it relates to the means of the fleet. To master this understanding, and to effectively articulate it, professional naval officers must bring a knowledge of history and strategy to naval policy, equal to that brought in technology and better business practices. Understanding the enduring relevance of sea power was, after all, Mahan's true contribution.¹⁵⁴

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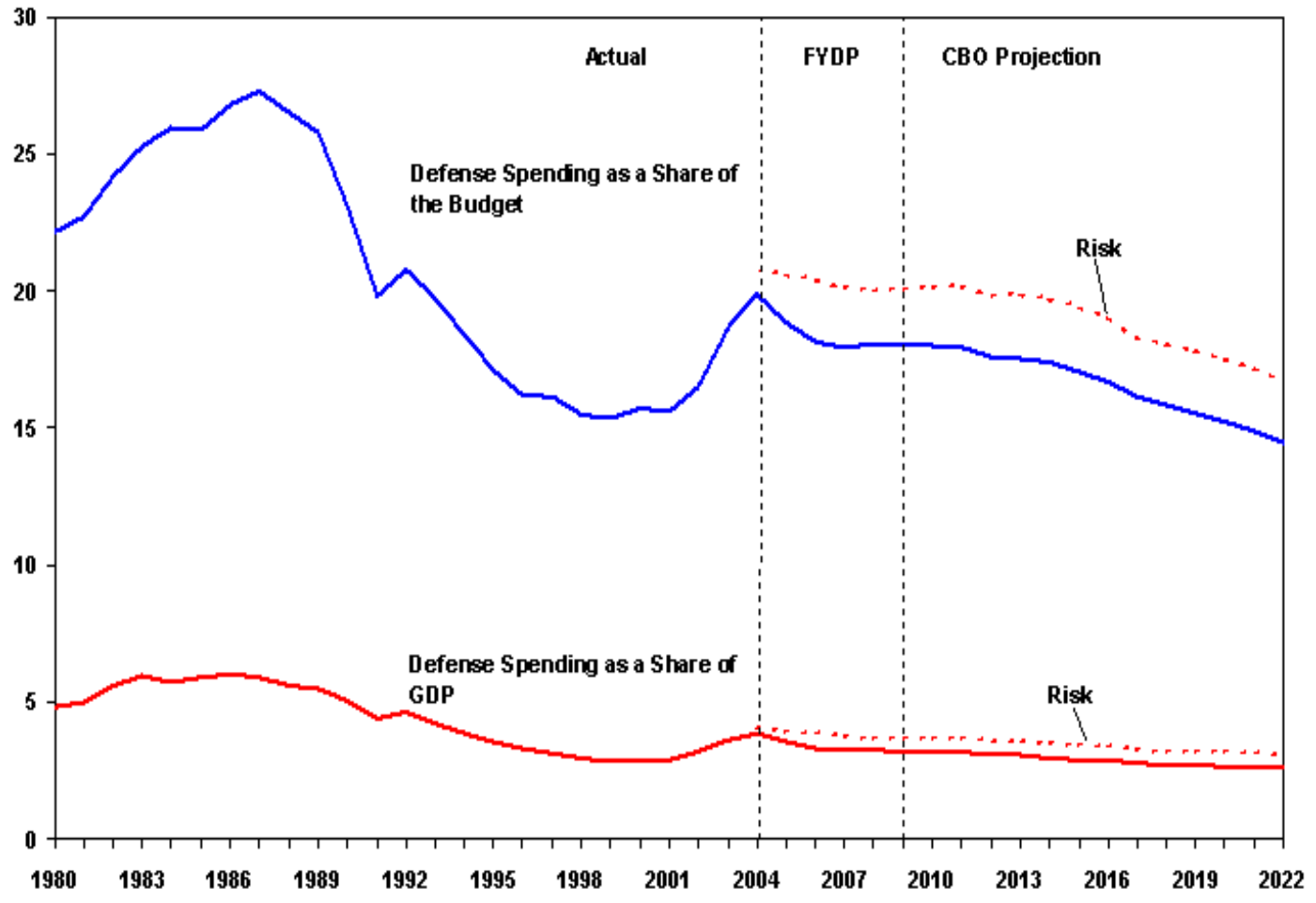
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- ¹⁵¹ GlobalSecurity.org, "CG(X)/CG-21". URL: <http://www.globalsecurity.org/military/systems/ship/cg-21.htm>. Accessed March 2004.
- ¹⁵² Naval Sea Systems Command, Program Executive Office for Ships, "DD(X) Transformational Systems". URL: <http://peoships.crane.navy.mil/ddx/default.htm>. Accessed March 2004.
- ¹⁵³ Lieutenant Commander John R. Olsen USN. "An Alternative Vision of Sea Power 21." *Naval Institute Proceedings* 129, no. 1. (October 2003): 80-83.
- ¹⁵⁴ Sumida, 39-41.

APPENDIX A
DEFENSE SPENDING AS A SHARE OF US BUDGET AND GDP

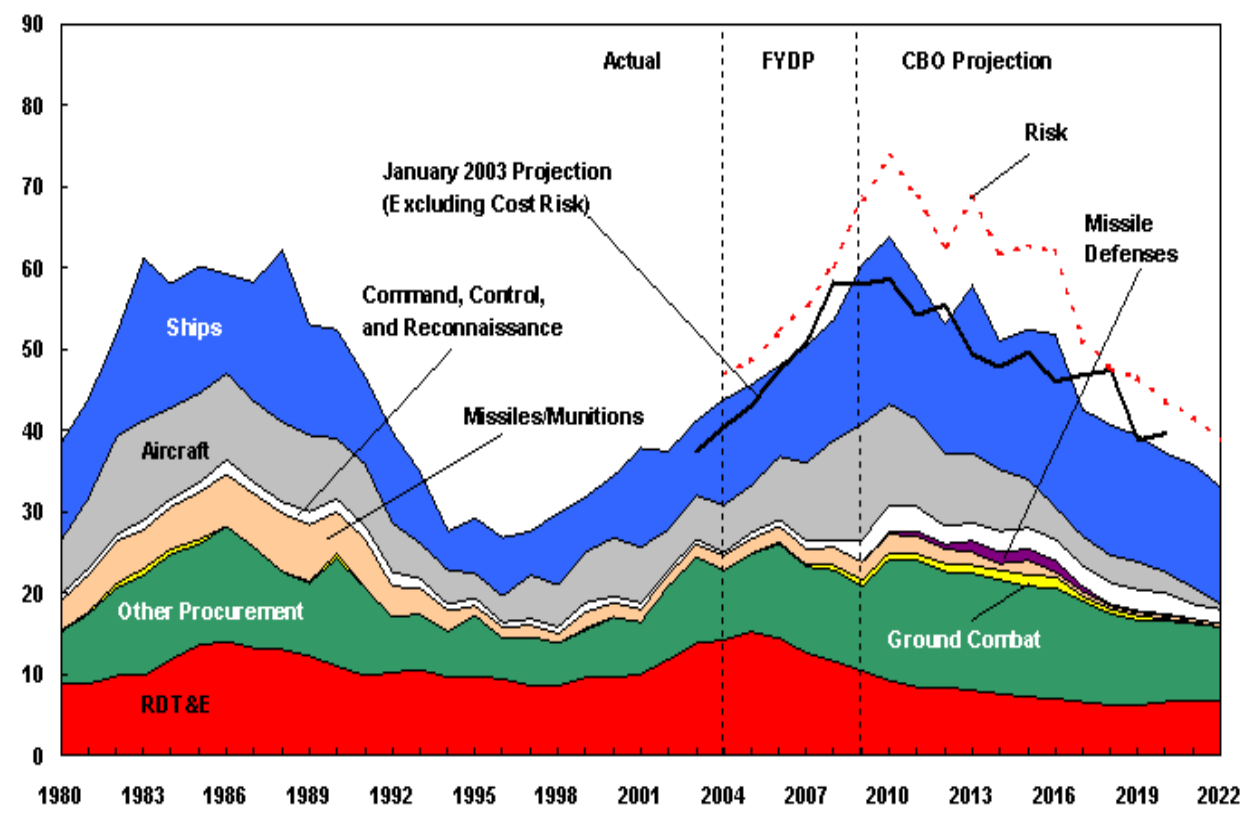


Source Congressional Budget Office. *The Long Term Implications of Current Defense Plans: Detailed Update for Fiscal Year 2004* (February 2004)

URL: <http://www.cbo.gov/showdoc.cfm?index=5017&sequence=2&from=0>.

- Other: The share of GDP attributable to defense spending falls because projected real (inflation-adjusted) increases in GDP outpace the increases projected for defense outlays.
- DoD's share of federal spending declines because real increases projected in mandatory spending for programs such as Social Security and Medicare outpace increases projected for defense spending.

APPENDIX A



- The 2004 FYDP and CBO's current projection through 2016 envision providing greater investment resources to the Department of the Navy (which includes the Marine Corps) than did the 2003 FYDP and CBO's January 2003 projection.
 - Current plans would increase Navy investment from \$44 billion in 2004 to a peak of about \$64 billion in 2010.
 - After that time, investment resources would gradually decline to \$33 billion by 2022, averaging about \$47 billion a year between 2010 and 2022.
- If costs grow as they have in the past, however, the Navy's investment spending could rise to a peak of about \$74 billion in 2010, average \$56 billion a year between 2010 and 2022, and then fall back to about \$39 billion by the end of the period.
- Between 2004 and 2009, the Navy's planned annual shipbuilding grows from 8 to 14 ships a year.
- The Navy and Marine Corps now plan to integrate their tactical aircraft forces more fully, resulting in less need for new planes than CBO projected in January 2003.

APPENDIX B **COST TRENDS IN NAVAL PLATFORMS**

8

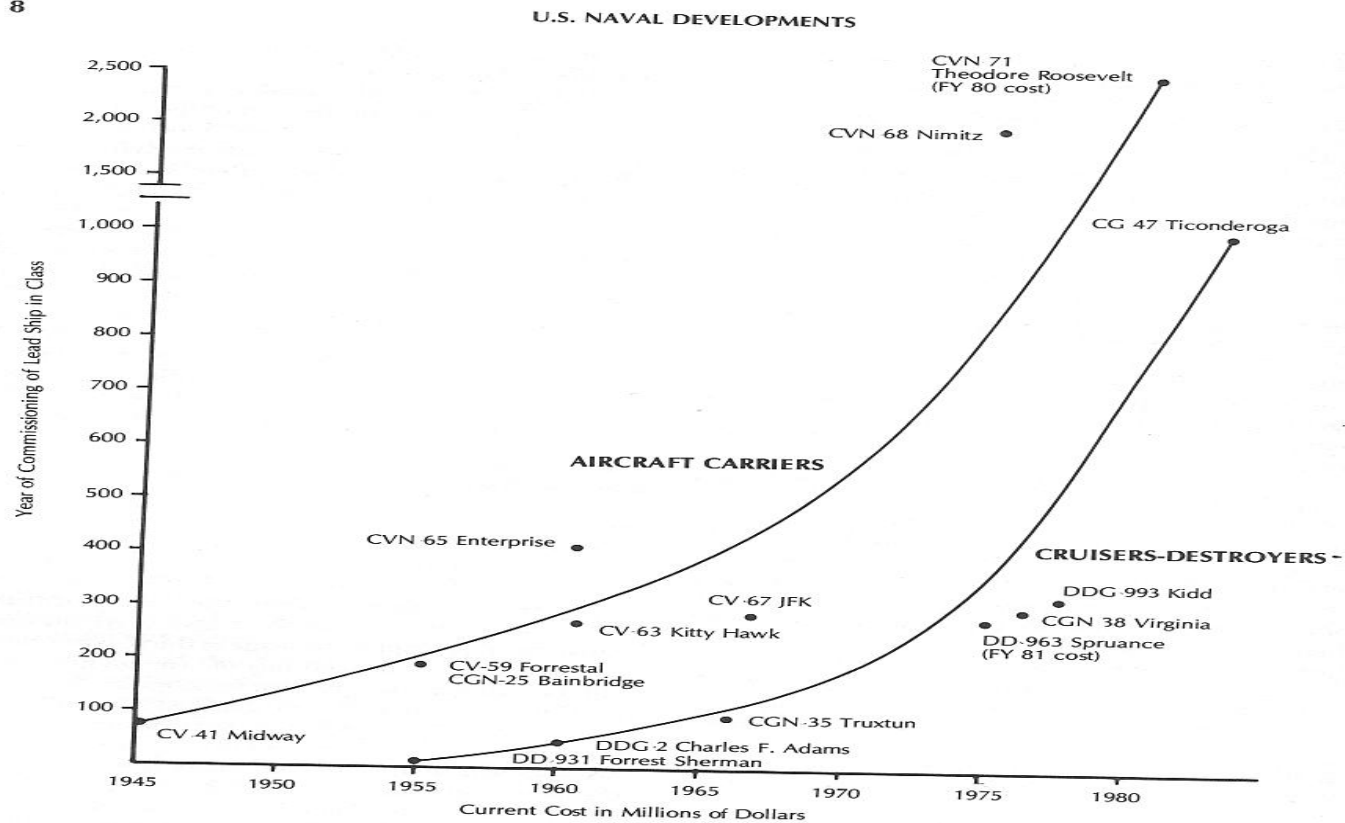
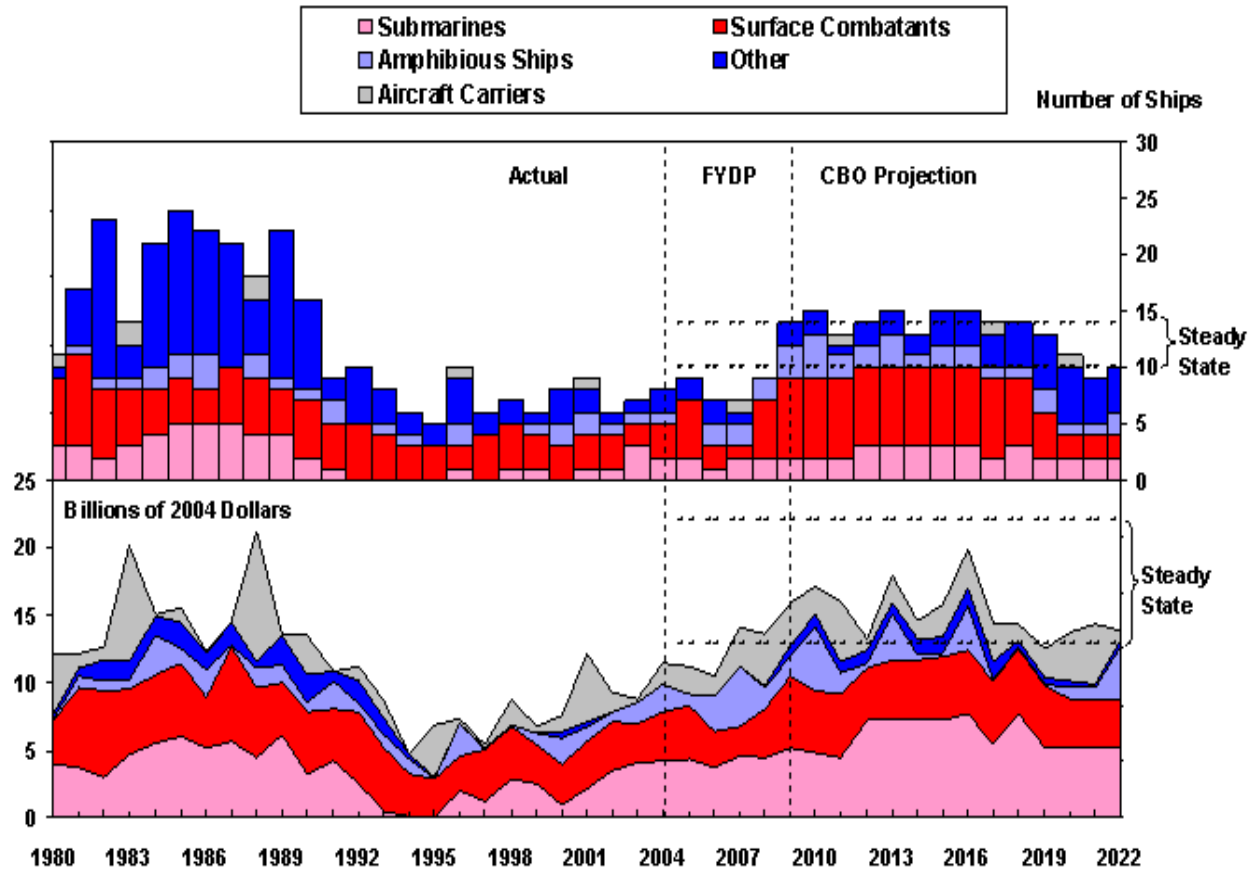


FIGURE 1.1
Cost Trends for Major U.S. Navy Warships.

Source: Jan S. Breemer, *US Naval Developments* (Annapolis: Nautical and Aviation Publishing Company of America, 1983), 8.

APPENDIX C
OVERALL TREND IN SIZE OF FLEET 1980-2002



Source Congressional Budget Office. *The Long Term Implications of Current Defense Plans: Detailed Update for Fiscal Year 2004* (February 2004)

URL: <http://www.cbo.gov/showdoc.cfm?index=5017&sequence=2&from=0>

APPENDIX D BALANCE OF NAVAL ARMS

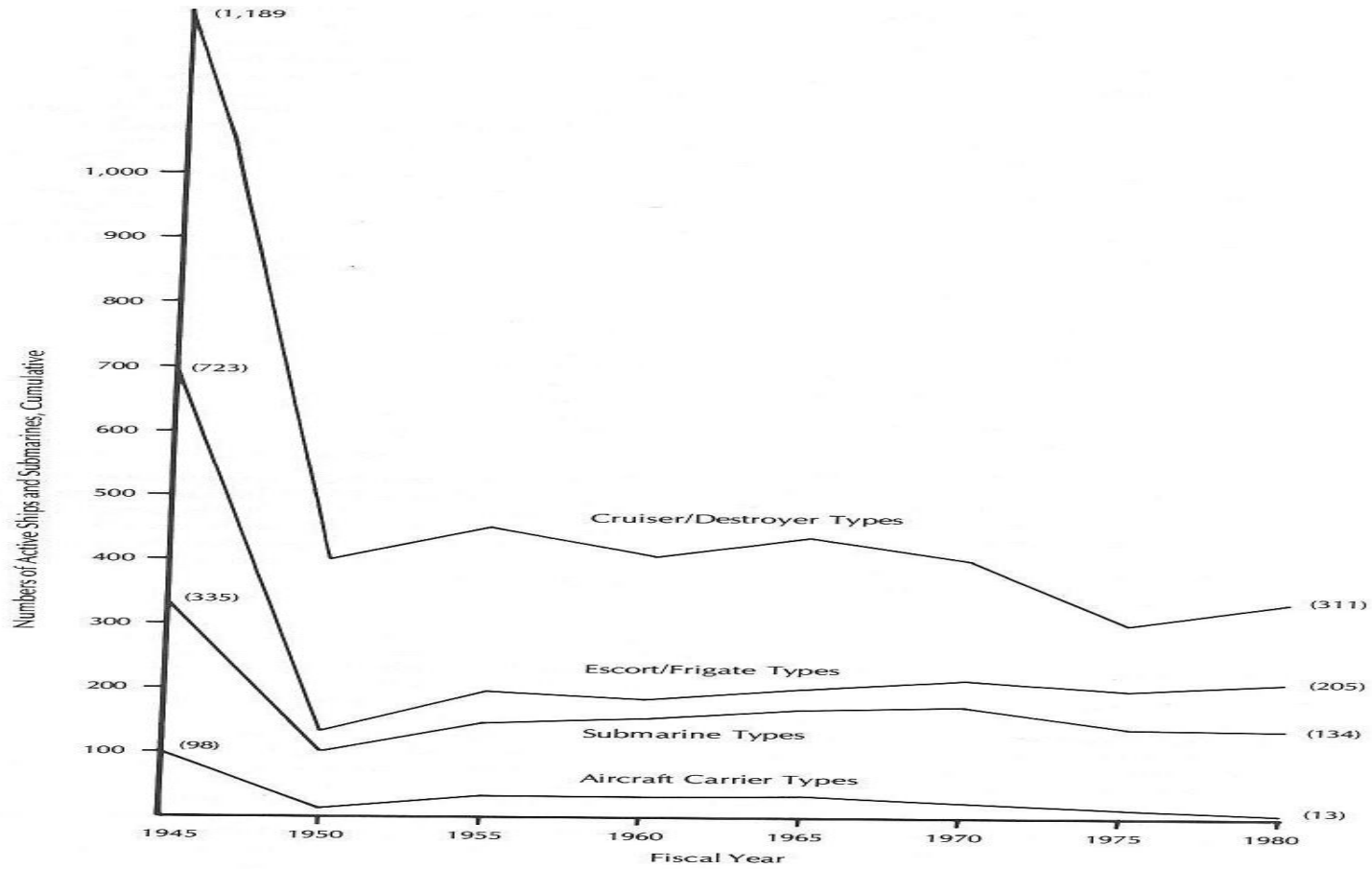


FIGURE 1.2
U.S. Navy Force Levels (Cumulative) By Principal Ship Types at Five-Year Intervals

Source: Jan S. Breemer, *US Naval Developments* (Annapolis: Nautical and Aviation Publishing Company of America, 1983), 10.

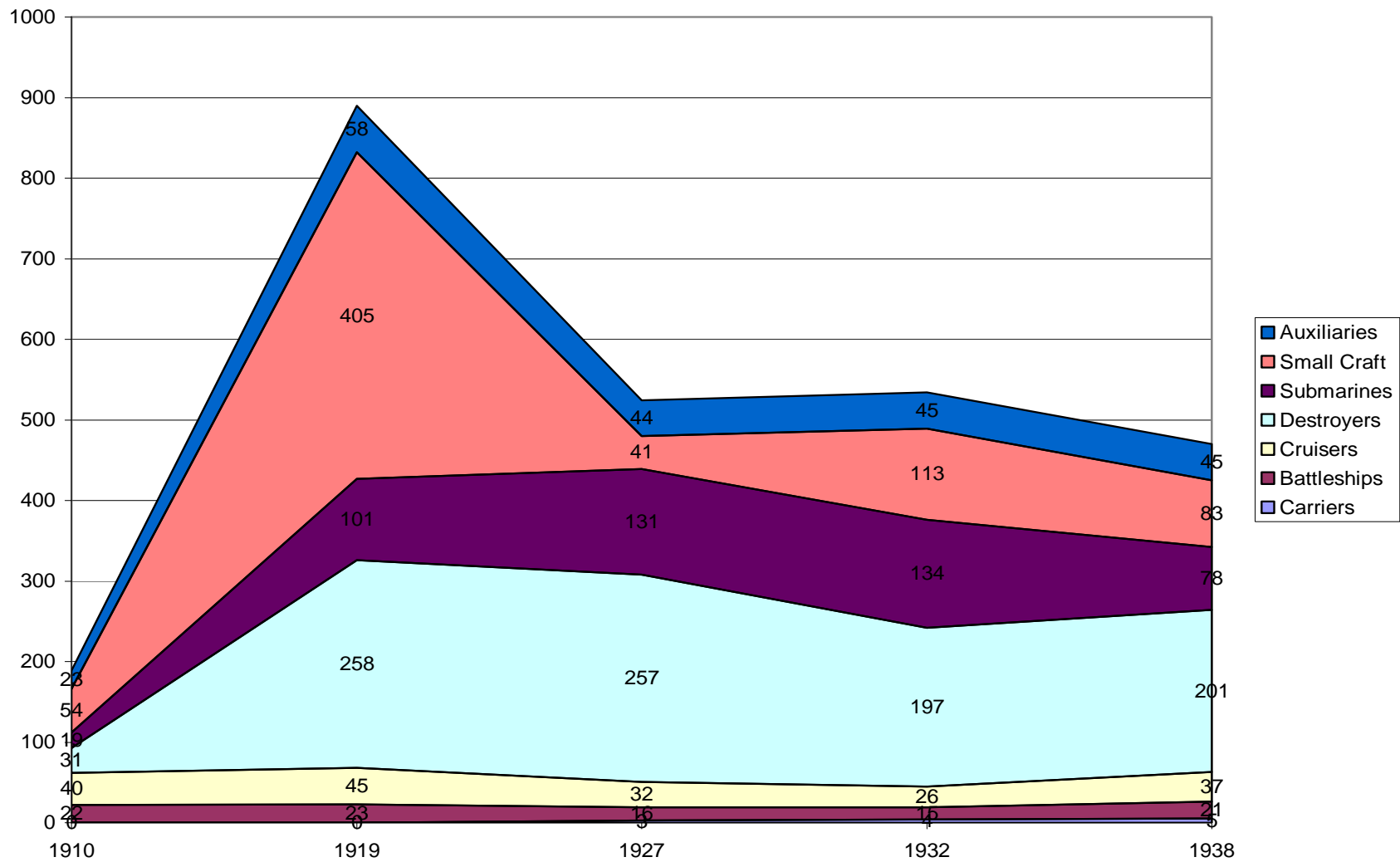
APPENDIX E
FUNCTIONS OF NAVIES

<u>Corbett</u>	<u>Barnett (Naval Strategies)</u>	<u>Reynolds (Functions)</u>	<u>Uhlig (Ways and Purposes of Naval Warfare)</u>	<u>Chase (Functions of the US Navy)</u>	<u>NDP-1 (Enduring Roles)</u>
To Secure Command of the Sea Blockade To Contest Command of the Sea "Fleet in being" Minor Counterattacks To Execute Command of the Sea Defend Against Invasion To defend commerce	Fleet Battle "Fleet in being"	Control the Seas Through a Strong Battle Fleet	 Struggle for Local Mastery of the Sea	Commanding the Seas	Maintain Maritime Superiority
To attack commerce	Commerce raiding	To interdict or destroy enemy shipping		Enforce US Trade and Shipping Interests Abroad Commerce raiding	To protect lines of communication To deny the enemy commercial use of the sea
	Blockade	Blockade enemy coasts	The blockade		
Attack in support of land operations	Maritime power projection	Engage in combined land operations	Support of troops by fires	Direct Support for Land Operations	To establish an area of operations for projecting power ashore
Defense of military operations				Projecting force inland from the Sea	Conduct such land operations as essential to the prosecution of naval campaigns

APPENDIX E
FUNCTIONS OF NAVIES

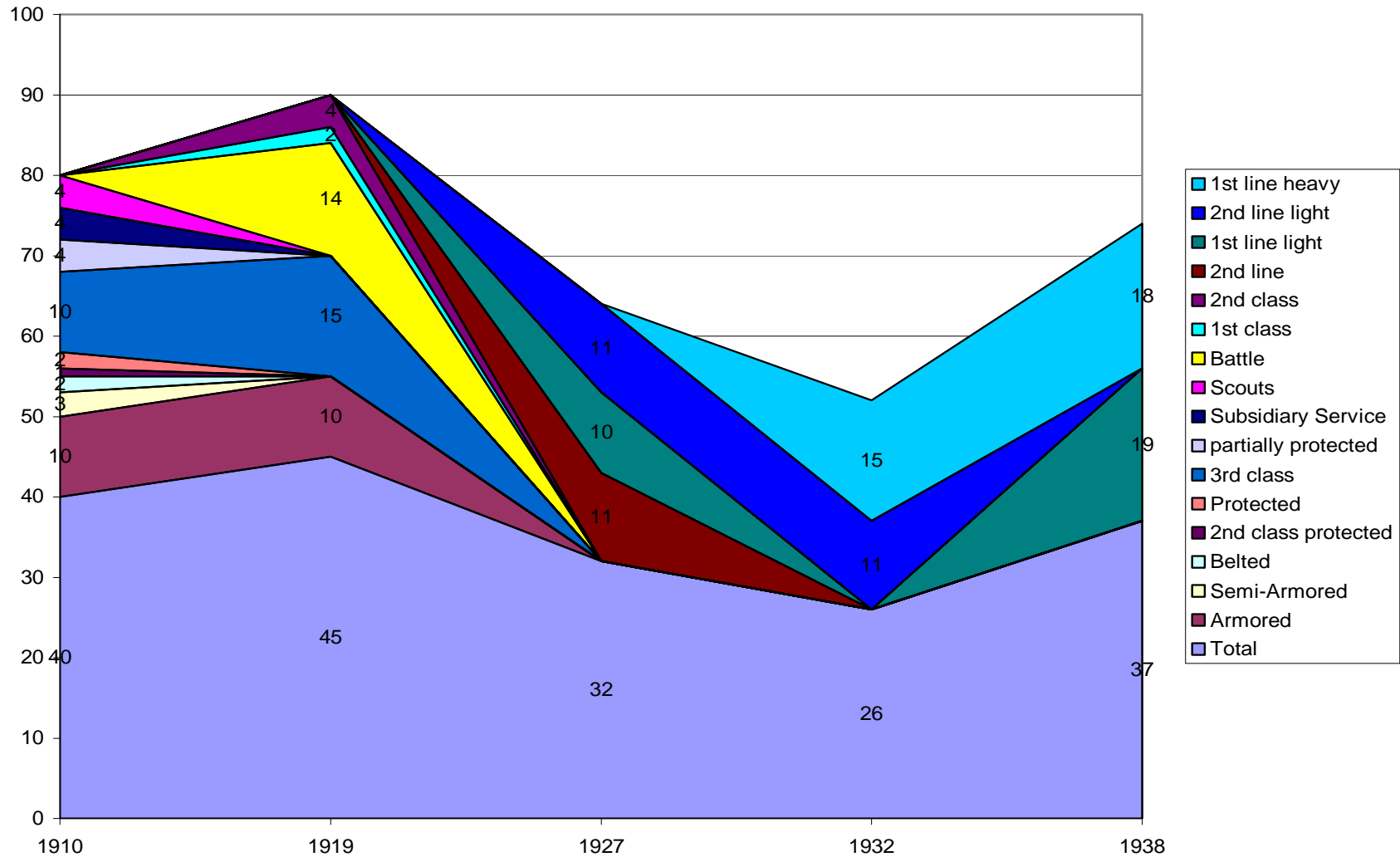
<u>Corbett</u>	<u>Barnett (Naval Strategies)</u>	<u>Reynolds (Functions)</u>	<u>Uhlig (Ways and Purposes of Naval Warfare)</u>	<u>Chase (Functions of the US Navy)</u>	<u>NDP-1 (Enduring Roles)</u>
Support of military operations			Strategic Movement of Troops Landing of armies on hostile shores Support of troops by logistics		To protect the naval logistic support of forward deployed battle forces To deny the enemy military use of the sea Seizing or defending advanced naval bases
		Conduct amphibious operations	Acquisition of advanced bases as close as possible to the scene of action (by either military force or civil means)		
		Engage in strategic bombardment		Strategic deterrence	
				Serve as an Instrument of Foreign Policy	Contribute to regional stability

APPENDIX F
FLEET FUNCTIONAL AND CLASS DISTINCTIONS 1910-1938



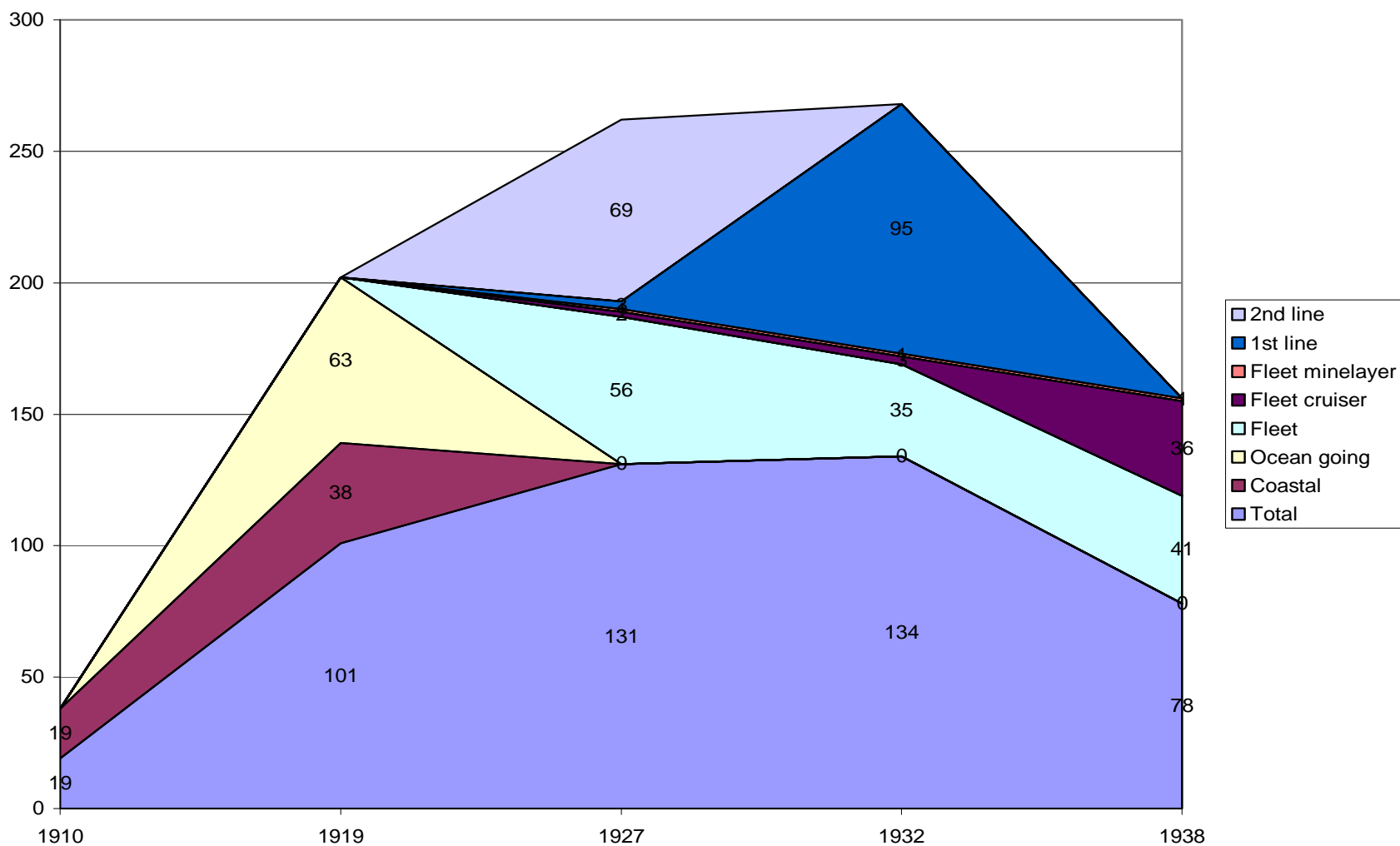
Source: Jane's Fighting Ships (London: Segon, Low, Marsten and Co. LTD.). 1910, 1919, 1927, 1932 and 1938 editions

APPENDIX F FLEET CLASS AND FUNCTIONAL DISTINCTIONS



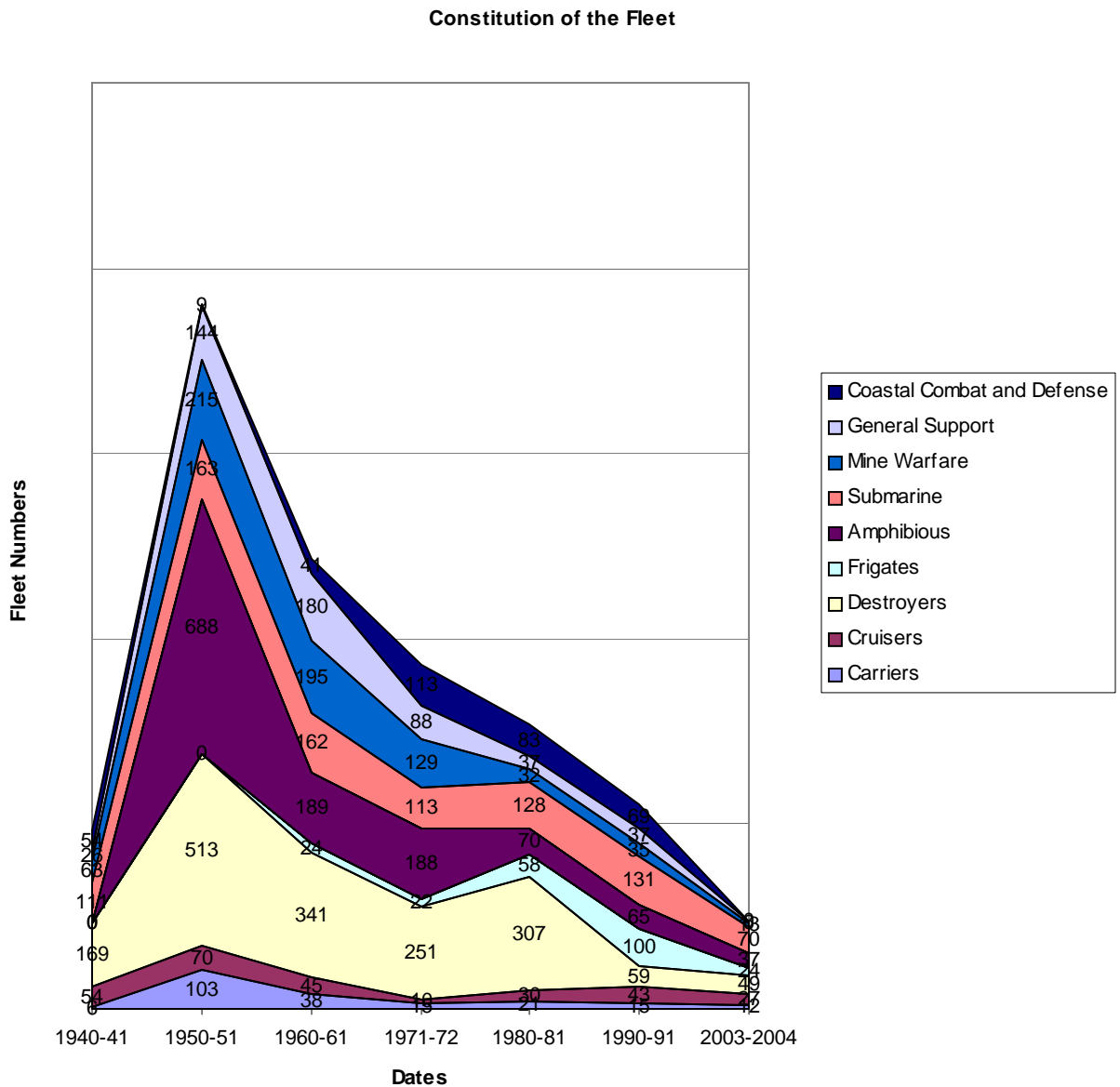
Source: Jane's Fighting Ships (London: Segon, Low, Marsten and Co. LTD.). 1910, 1919, 1927, 1932 and 1938 editions

APPENDIX F **SUBMARINE FUNCTIONAL DISTINCTIONS**



Source: Jane's Fighting Ships (London: Segal, Low, Marsten and Co. LTD.). 1910, 1919, 1927, 1932 and 1938 editions

APPENDIX G **OVERALL FLEET CONSTITUTION POST WORLD WAR II**



Source: *Conway's All the World's Fighting Ships 1947-1995* (Annapolis: Naval Institute Press, 1995).

Following World War II, with the exception of fleet ballistic missile submarines, coastal craft, mine warfare platforms and the submarine fleet, the number of Navy combatants has been based on escort requirements for carrier task force or carrier battle groups (now carrier strike groups) and forward deployment of task force or battle groups. The decision to permanently assign surface and submarine combatants to amphibious ready groups (ARGs) as Expeditionary Strike Groups (ESG) under the Global Concept of Operations changes this fifty year practice.

APPENDIX G

OVERALL FLEET CONSTITUTION POST WORLD WAR II

World War II left the Navy with a fleet of fast carrier task forces. These carrier task forces were forward deployed immediately following World War II for the purposes of counter-force strike against local Soviet naval forces in home waters. Plans for heavy strategic attack carriers in the immediate post-War years were canceled. Following the “crisis of relevance” with independent Air Force strategic bombardment doctrine and the Korean War fast attack carriers were initially assigned a strategic attack role, as well as having proven their tactical air interdiction and close air support capabilities in the Korean land campaign. Fast carrier task forces originally had a sufficient margin of speed against submarine attack and through the 1950s the need for other design escort carriers faded (previous Essex class carriers had been converted to ASW duties). Carriers were divested of strategic nuclear responsibilities under the Kennedy administration and their primary value to the fleet became crisis response and continued tactical air interdiction and close air support during the Vietnam War. The planned size of the carrier force has varied considerably since the Korean War. In the late 1970s carrier numbers were based on forward deployment and counter-Soviet naval presence, and their applicability to crisis response as well as potential fleet engagement. The basing of carrier numbers on forward presence was interrupted briefly during the early 1990s following the fall of the Soviet Fleet by recommendations to base carrier numbers on Two Major Regional Contingencies (MRC). The two MRC requirements were less than the baseline of twelve the Navy was willing to accept and the Navy continued routine forward deployment of carrier battle groups as a basis for carrier force numbers. Carriers are remarkably versatile as the primary means of fleet battle and in providing tactical air interdiction, deep battlefield interdiction and strike, and close air support. [Under the current Fleet Response Plan, carrier strike groups no longer perform routine six month forward deployments. War on terror contingency plans call for a level of readiness that is only achievable by reducing carrier strike group forward deployment to boost readiness].

Cruiser evolution has been varied. Prior to World War II cruisers were divided into heavy anti-ship cruisers considered capable of fleet engagements, and light anti-ship cruisers constructed for interdiction, destruction, protection of shipping, and battle fleet scouting duties. Traditional cruiser distinctions disappeared following World War II as cruisers became primarily identified in value to their escort contributions in carrier task forces. Following World War II, the Navy adopted a separate class of cruisers designed for area anti-air defense (AAW) in support of carrier task forces and heavy, or battle cruisers eventually merged with light cruisers into “guided missile cruisers. Cruisers were no longer identified by independent operations. Eleven post-World War II cruisers were converted to missile ships specifically to screen carrier task forces. Cruiser conversion ceased by the mid-1960s. By the 1960s there was little functional difference between a Cleveland class cruiser and the Leahy or Belknap class, a fact recognized when the Navy re-designated these former light cruisers, or frigates, as cruisers in 1975. Gun-armed cruisers left from World War II functioned as area anti air defense and anti-ship escorts for carrier groups postwar and participated in shore bombardment roles in Korea and Vietnam. Some were re-fitted as flagships. Aegis equipped cruisers now serve ship engagement (ASUW), area anti-air defense (AAW), and anti-submarine warfare (ASW). Missile equipped cruisers are as important as air control platforms as they are defensive weapons. They have since Vietnam provided this capability.

The Navy’s destroyer entering World War II was a convoy and battle fleet escort, designed for limited anti-ship capability and anti-submarine warfare. Following World War II, the destroyer became identified with carrier task force escort duty. The Navy in the 1950s and 1960s saw the need briefly for various classes of destroyers based on specific function within the task force, notably ASW, radar picket, and convoy escort, reflected in class distinctions. Initially in 1954 classes were thought to be needed for both naval air defense and continental defense in the form of radar pickets. In 1954 consideration was given to eliminating the traditional destroyer class in favor of functionally specialized ASW ships and convoy screening escorts. Former destroyer escorts became open ocean escorts. Because of carrier speeds most escort conversions and classes were eliminated in favor of fixed arrays and new designs concentrated on fast ASW and AAW. In the 1960s and 1970s the cruiser size Spruance class DD was built as a primary ASW escort and the Kidd class was built as an air defense destroyer. Spruances were not given an area anti-air warfare capability. The Spruance class was a direct result of the increased mobility of Soviet nuclear attack submarines. The nature of the open ocean ASW and AAW defense needs of the carrier task force mandated larger numbers of ships capable of high speed ASW screening and fewer AAW ships. The pure ASW escorts were the Spruances. Arleigh Burke class were a combination fast ASW escort and AAW platform, and are air control capable though not ideal. Air control capability resides with the cruiser.

Submarine classes have been concentrated on ASW against opposing submarines since the 1950s. The only exceptions are some experimental types and the fleet ballistic missile submarine. In the 1970s and 1980s

APPENDIX G
OVERALL FLEET CONSTITUTION POST WORLD WAR II

submarines were given anti-ship missile capability (later rescinded) and cruise missile capability. There has been longstanding interests in a guided missile submarine, a few of which have existed in diesel and nuclear form, and which is appearing again with the new SSGN class.

The amphibious functional classes are the most varied due to the complexity of operations and required capabilities. The amphibious force of World War II was gradually replaced with smaller numbers in the 1950s. The amphibious operations of World War II had required a combination of heavy lift non-beaching ships and beaching craft to bring their equipment to shore. The ships (except for dock landing ships (LSD)) could carry personnel vehicle (LCVP) or small mechanized quipment (LCM) beaching craft; large tanks and vehicles required a larger beaching craft, the LCT, which postwar became the LSU and then the LCU (landing craft, utility). The LSU and LCU had to be carried in a well deck, as in a LSD. The non-beaching ships were attack (personnel) transports (APA and later LPA) and attack cargo ships (ADA later LKA). There were in addition large beaching ships, LSTs, which could carry relatively less on their displacement than the AKAs but which could carry very heavy equipment and could disgorge vehicles more quickly.

The threat of atomic attack spurred the helicopter –carriers could be converted to carry troops and helicopters. The solution of helicopter/troop transport and combination landing ship capability was the LHA amphibious assault ship, which carried a large well deck as well as a helicopter hangar and large flight deck. Fast cargo ships have always been a desired class. The LPD was a combination of LSD and attack transport roles.

APPENDIX H
FLEET COMBATANT CAPABILITIES

<u>Carrier (CVN)</u>	<p>Deep Air Interdiction</p> <p>Battlefield Interdiction</p> <p>Close Air Support</p> <p>Manned Counter-Air or Anti-Air Warfare</p> <p>Precision Strike</p>
<u>Amphibious Assault Ship (LHA/LHD)</u>	<p>Battlefield Air Interdiction</p> <p>Close Air Support</p> <p>Troop Transport and Landing Ashore</p>
<u>Cruiser</u>	<p>Area Air and Point Air Defense</p> <p>Cruise Missile Strike</p> <p>Anti-Submarine Warfare</p> <p>Anti-Surface Warfare</p>
<u>Destroyer (DDG 51 Class)</u>	<p>Aea Air and Point Air Defense</p> <p>Cruise Missile Precision Strike</p> <p>Anti-Submarine Warfare</p> <p>Anti-Surface Warfare</p>
<u>Submarine (SSN)</u>	<p>Anti-Surface Warfare</p> <p>Anti-Submarine Warfare</p> <p>Cruise Missile Strike</p> <p>Covert Intelligence, Surveillance And Reconnaissance</p> <p>Special Forces Insertion</p> <p>Offensive Mine Warfare</p>

APPENDIX I METHODS OF SECURING AND CONTESTING COMMAND

Methods of Securing Command of the Sea

Corbett

"Obtaining a Decision" - Corbett stops short of defining the method as fleet battle.

Barnett

Fleet Battle - (Mahan's method).

Uhlig

.

Reynolds

Control the Seas Through a Strong Battle Fleet - Expected when strong opposing fleets exist.

Chase

Chase does not define a method - only the function.

NDP-1

Maintaining Maritime Superiority - Doctrine does not define a method - only the function..

Blockade

Methods of Contesting the Sea

"Fleet in being"

Struggle for Local Mastery of the Sea - Uhlig defines a function, inherently related to purpose

Minor counter-attacks

APPENDIX J

THE FUNCTIONS OF THE NAVY IN SERVING THE SAFE AND FREE PASSAGE OF GOODS AND SERVICES ON THE SEA AND DENYING AN ADVERSARY THE SAFE AND FREE PASSAGE OF GOODS AND SERVICES ON THE SEA

Policing Functions Corbett

To defend
commerce

Barnett

Reynolds

To protect
merchant
shipping

Uhlig

Chase

To enforce US
trade and
shipping
interests abroad

NDP-1

To protect lines
of communication

War-fighting functions

To attack
commerce

Commerce Raiding

To interdict or
destroy enemy
shipping

Commerce raiding

To deny an enemy
commercial use
of the seas

Blockade

Blockade

Blockade enemy
coasts

The blockade

Consolidation:

To Protect US and Allied Shipping

To Interdict or Destroy Enemy Shipping

APPENDIX K
THE FUNCTIONS OF THE NAVY IN SERVING THE SAFE DELIVERY OF GOODS AND SERVICES ASHORE

<u>Corbett</u>	<u>Barnett</u>	<u>Reynolds</u>	<u>Uhlig</u>	<u>Chase</u>	<u>NDP-1</u>
Attack in support of land operations	Maritime power projection	Engage in combined land operations	Strategic Movement of Troops	Direct Support for Land Operations	To establish an area of operations for projecting power ashore
Defense of military operations		Conduct amphibious operations	Landing of armies on hostile shores	Projecting force inland from the Sea	Conduct such land operations as essential to the prosecution of naval campaigns
Support of military operations			Support of troops by logistics		To establish an area of operations for projecting power ashore
			Acquisition of advanced bases as close as possible to the scene of action (by either military force or civil means)		

Consolidation:
 To move battle forces to theater.
 To land battle forces ashore.
 To seize advanced bases as required.
 To support battle forces by logistics.
 To support battle forces by fires

APPENDIX L

THE FUNCTIONS OF THE NAVY IN DENYING AN ADVERSARY THE SAFE DELIVERY OF GOODS AND SERVICES ASHORE

<u>Corbett</u>	<u>Barnett</u>	<u>Reynolds</u>	<u>Uhlig</u>	<u>Chase</u>	<u>NDP-1</u>
Defend Against Invasion	Coastal Defense	Defend Against Invasion		Coastal Defense	
		Engage in strategic bombardment		Strategic deterrence	
<u>Consolidation:</u> To defend the homeland To provide strategic deterrence					

APPENDIX M
ENDURING NAVY ROLES AND FUNCTIONS

Enduring Purposes (Roles):

1. To ensure the safe movement of goods and services (commercial and military) safely on the seas.

2. To ensure the safe movement of goods and services (commercial and military) safely from the seas.

3. To prevent/deny an adversary the safe movement of goods and services (commercial and military) safely on the seas.

4. To prevent/deny an adversary the safe movement of goods and services (commercial and military) from the seas.

5. To Serve in Support of Foreign Policy.

Enduring Functions:

1. To protect US and Allied Shipping.

1. To move battle forces to theater.

2. To land battle forces ashore.

3. To seize advanced naval bases as required.

4. To support battle forces by logistics.

5. To support battle forces by fires.

1. To interdict and destroy enemy shipping.

1. To provide strategic deterrence.

2. To provide homeland defense

1. To promote, protect and defend US interests abroad.

APPENDIX N
EXAMPLES OF MISSION AREAS BY FUNCTION (EXISTING AND FUTURE)

<u>Functions of the Navy</u>	<u>New Mission Capabilities</u>	<u>Core Mission Capabilities</u>
To Protect US and Allied shipping	Combat Piracy in strategic littorals. Combat Terrorism in strategic littorals	Anti-ship Point Air Defense Area Air Defense Unmanned Reconnaissance? Mine Countermeasures? Littoral Undersea Warfare (Air, Surface, Sub-surface?)
To move battle forces to theater	Forcible Entry	Strategic Sealift Maritime Pre-Positioning
To land battle forces ashore	Sea Basing of Naval and Joint Forces Forcible Entry	MPS Amphibious Assault
To seize advanced bases as required	Sea Basing of Naval and Joint Forces Theater Missile Defense Ship-to -Objective Maneuver	Amphibious Assault
To support battle forces by logistics	Sea Basing of Naval and Joint Forces Ship-to-Objective Maneuver (STOM)	Strategic Sealift Maritime Pre-Positioning
To support battle forces by fires	Naval Surface Fire Support Time-Sensitive Strike	Precision Cruise Missile Strike Precision Air Strike Close Air Support Tactical and Battlefield Air Interdiction Defensive Combat Air
To interdict and/or destroy adversary shipping	In-Close Fighting?	Anti-ship Maritime Interception Operations Enforcement of Sanctions

APPENDIX N
EXAMPLES OF MISSION AREAS BY FUNCTION

To Promote, Protect and Defend US Interests Abroad	Theater Missile Defense Dissuade Adversaries Psychological Operations from the Sea Ship-to-Objective Maneuver Unmanned Reconnaissance	Time-Sensitive Strike Precision Strike Massed strike Deter Adversaries Non-combatant Evacuation Humanitarian Assistance. Inter-Allied Military Exercises and Cooperation Non-Combatant Evacuation
To defend the homeland	Ballistic Missile Defense Interdiction of Weapons of Mass Destruction Terrorist Interdiction on the Seas Time-Sensitive Strike Insertion of Special Forces National Manned Intelligence, Reconnaissance and Surveillance Unmanned National Intelligence, Reconnaissance and Surveillance Ship-to-Objective Maneuver (STOM)	Anti-ship Maritime Interception Operations Enforcement of Sanctions Inter-Agency Counter-narcotics Enforcement
To provide strategic deterrence		Strategic Deterrence

APPENDIX O
CARRIER STRIKE GROUP AND EXPEDITIONARY STRIKE GROUP CAPABILITIES

Expeditionary Strike Group		Carrier Strike Group	
Amphibious Assault Ship (LHA/LHD)	Landing Troops and Equipment Ship to Shore Aircraft Movement	CVN	Tactical Air Strike Tactical Air Interdiction Close Air Support Counter Air Operations
Amphibious Landing Ship	Landing Troops and Equipment		
Amphibious Dock Ship	Landing Troops and Equipment		
DDG	AAW Self Defense SUW USW Cruise Missile Strike Anti-ship Defense	DDG	AAW Self Defense SUW USW Cruise Missile Strike Anti-ship Defense
CG	AAW Area Defense SUW USW Cruise Missile Strike Anti-Ship Defense	CG	AAW Area Defense SUW USW Cruise Missile Strike Anti-Ship Defense
SSN	ISR SUW USW Cruise Missile Strike	SSN	ISR SUW USW Cruise Missile Strike

Source: Chief of Naval Information (CHINFO) URL: <http://www.navy.mil>.

APPENDIX P
EXCERPTS FROM CONGRESSIONAL BUDGET OFFICE ON FUTURE SURFACE COMBATANT
PROGRAMS

Characteristics of Current and Proposed Surface Combatants

Ship Class	Type	Displacement (Tons)	Crew Size	Range at 20 Knots (Nautical miles)	Armament	Missions
Current Ships						
DD-963 Spruance	General- purpose destroyer	9,300	Up to 375	6,000	Two helicopters, two 5- inch guns, eight Harpoon antiship missiles, 61 VLS cells	Land attack, open- ocean antisubmarine warfare
FFG-7 Oliver Hazard Perry	Guided- missile frigate	4,100	221	4,200	Two helicopters, one Mark 13 launcher and magazine with 40 self- defense missiles, one 76-mm gun, six torpedo tubes	Convoy escort, maritime interception, open-ocean antisubmarine warfare
CG-47 Ticonderoga	Guided- missile cruiser	9,500	Up to 410	6,000	Aegis combat system, two helicopters, two 5- inch guns, 122 VLS cells ^a	Long-range air and missile defense, land attack, open-ocean antisubmarine warfare
DDG-51 Arleigh Burke (Flight I/II)	Guided- missile destroyer	8,400	340	4,400	Aegis combat system, one 5-inch gun, eight Harpoon antiship missiles, 90 VLS cells	Long-range air and missile defense, land attack, open-ocean antisubmarine warfare
DDG-51 Arleigh Burke (Flight IIA)	Guided- missile destroyer	9,200	340	4,400	Aegis combat system, two helicopters, one 5- inch gun, 96 VLS cells	Long-range air and missile defense, land attack, open-ocean antisubmarine warfare

APPENDIX P
EXCERPTS FROM CONGRESSIONAL BUDGET OFFICE ON FUTURE SURFACE
COMBATANT PROGRAMS

Proposed Ships^b						
DD(X)	General-purpose destroyer	16,000	95 to 200	N.A.	Two helicopters, two 155-mm advanced gun systems, 128 VLS cells	Land attack, antisubmarine warfare
Littoral Combat Ship	Focused-mission combatant	3,000	N.A.	N.A.	One helicopter, one mission module	Counterboat, countermine, littoral antisubmarine warfare
CG(X)	Guided-missile cruiser	16,000 or more	N.A.	N.A.	Next-generation air and missile defense combat system, 200 VLS cells, two helicopters, possibly other systems	Long-range air and missile defense, land attack

Source: Congressional Budget Office.

Note: VLS = vertical launch system; mm = millimeter; N.A. = not available.

a. The first five ships of the class, CG-47 to CG-51, do not have VLS cells.

b. Many of the characteristics of these ships represent estimates published in media reports or CBO assumptions based on conversations with Navy officials.

Source: Congressional Budget Office, *Transforming the Navy's Surface Combatant Force* (March 2003). URL: <<http://www.cbo.gov/showdoc.cfm?index=4130&sequence=2>>.

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